This document gives pertinent information concerning the reissuance of the VPDES Permit listed below. This permit is being processed as a **Minor**, **Municipal** permit. The discharge results from the operation of a 0.14 MGD wastewater treatment plant with operational flows established at 0.04 MGD, 0.07 MGD and the design flow of 0.14 MGD. This permit action consists of updating the proposed effluent limits to reflect the current Virginia WQS and updating permit language as applicable. The effluent limitations and special conditions contained in this permit will maintain the Water Quality Standards of 9VAC25-260-00 et seq.

1.	Facility Name and Mailing Address:	Camp Upshur STP Commander, MCB Quantico c/o NREA (B046) 3049 Bordelon Street Quantico, VA 22134-5001	SIC Code:	4952 WWTP
	Facility Location:	MCB Quantico – Camp Upshur Building 2666	County:	Prince William
	Facility Contact Name:	Steve Clark	Telephone Number:	703-432-0528
2.	Permit No.:	VA0028371	Expiration Date:	11/13/2010
	Other VPDES Permits:	None		
	Other Permits:	UST Registration ID 3021353 – Quantico Marine Corps Base Flying Club		
	E2/E3/E4 Status:	N/A		
3.	Owner Name:	US Marine Corps – MCB Quantico		
	Owner Contact / Title:	Steve Clark	Telephone Number:	703-432-0528
4.	Application Complete Date:	8/5/2010		
	Permit Drafted By:	Anna Westernik	Date Drafted:	10/15/2010
	Draft Permit Reviewed By:	Alison Thompson	Date Reviewed:	10/27/2010
		Bryant Thomas	Date Reviewed:	11/04/2010
	Public Comment Period:	Start Date: 2/24/2011`	End Date:	3/25/2011
5.	Receiving Waters Information:	See **Attachment 1** for the Flow Frequency Determination		
	Receiving Stream Name:	Cedar Run, UT	Stream Code:	1aXBG
	Drainage Area at Outfall:	0.41 square miles	River Mile:	0.24
	Stream Basin:	Potomac and Shenandoah River	Subbasin:	Lower Potomac River
	Section:	7a	Stream Class:	III
	Special Standards:	g	Waterbody ID:	VAN-A18R
	7Q10 Low Flow:	0.0 MGD	7Q10 High Flow:	0.0 MGD
	1Q10 Low Flow:	0.0 MGD	1Q10 High Flow:	0.0 MGD
	Harmonic Mean Flow:	0.0 MGD	30Q5 Flow:	0.0 MGD
	303(d) Listed:	Yes (Cedar Run)	30Q10 Flow:	0.0 MGD
	TMDL Approved:	Yes (Bacteria for Cedar Run)	Date TMDL Approved:	7/6/2004

6. Statutory or Regulatory Basis for Special Conditions and Effluent Limitations:

- ✓ State Water Control Law
- ✓ Clean Water Act
- ✓ VPDES Permit Regulation
- ✓ EPA NPDES Regulation
- ___ EPA Guidelines
- ✓ Water Quality Standards
- ✓ Other (Occoquan Policy)

7. Licensed Operator Requirements: Class III

8. Reliability Class: Class I

9. Permit Characterization:

___	Private	___	Effluent Limited	___	Possible Interstate Effect
✓	Federal	✓	Water Quality Limited	___	Compliance Schedule Required
___	State	___	Toxics Monitoring Program Required	___	Interim Limits in Permit
___	POTW	___	Pretreatment Program Required	___	Interim Limits in Other Document
✓	TMDL				

10. Wastewater Sources and Treatment Description:

Wastewater from the Camp Upshur sewage collection system flows via gravity to a 0.14-MGD wastewater treatment plant. Operational flows are established at 0.04 MGD, 0.07 MGD and the design flow of 0.14 MGD. The influent travels through a comminuter and a parshall flume. If the comminuter is inoperable, influent travels through a bar screen. After it leaves the parshall flume, it is mixed with returned activated sludge from the primary clarifiers. The influent flow is also metered and recorded in this area. A new influent meter became operational in July 2005.

Three aeration basins are present (two 35,000 gallon basins and one 75,000 gallon basin). Powdered lime is occasionally added to the aeration basin for pH adjustment.

Sewage from the aeration basin enters one of two clarifiers (only one is used at a time) Sewage leaving the clarifier enters the dosing tank. This tank is manually operated so the sewage can be pumped to Chemical tank #1, which acts as a settling tank (Chemical tank #2 is no longer in use). Sewage exiting Chemical tank #1 enters the two sandfilters and then travels to the chlorine contact tank, dechlorination area, and the outfall. Hypochlorination and tablet dechlorination are used for disinfection and dechlorination. Effluent flow is measured in this area and recorded on a chart in the operator's office.

This sewage treatment plant normally discharges one to two times each week into an UT of Cedar Run. Therefore flow is considered to be intermittent.

See **Attachment 2** for a facility schematic/diagram.

TABLE 1
OUTFALL DESCRIPTION

Outfall Number	Discharge Sources	Treatment	Design Flow	Latitude / Longitude
001	Municipal Wastewater	See Item 10 above.	0.04 MGD Current 0.07 and 0.14 MGD Future	38° 37' 41" N 77° 31' 21" W
See **Attachment 3** for Nokesville topographic map (195A).				

11. Sludge Treatment and Disposal Methods:

Due to low facility flow, little sludge is wasted. The wasted sludge is pumped to an aerobic digester. Currently, the sludge is held in this area and is not transferred to Mainside STP due to the small quantity of wasted sludge created at this facility. The six sludge drying beds are covered with geotextile material and are no longer used.

12. Discharges, Intakes, Monitoring Stations, Other Items in Vicinity of Discharge

TABLE 2
MONITORING STATIONS

Description	Receiving Stream/River Mile	Latitude/Longitude
Rt. 646 Monitoring Station (1aCER006.00)	Cedar Run/6.0	38° 38' 29"; 77° 30' 44"

TABLE 3
SINGLE FAMILY HOMES GENERAL PERMITS IN WATERBODY VAN-A18R

Permit Number	Permit Name	Receiving Stream
VAG406090	Barton Barry L Residence	Cedar Run, UT
VAG406486	Price Stevi A Residence	Slate Run, UT
VAG406228	Lancaster John M W Residence	Kettle Run
VAG406409	Hull George Residence	Cedar Run, UT
VAG406097	Hopkins Harvey J Residence	Broad Run
VAG406091	Perkins George W Residence	Cedar Run
VAG406480	Rambilias Ray Residence	Slate Run, UT
VAG406046	Sams Gary L Residence	Kettle Run
VAG406108	Tolson Patricia A Residence	Slate Run, UT
VAG406053	Elliott David A Residence	Broad Run, UT
VAG406013	Wright Wade J Residence	South Run, UT
VAG406469	Asbury United Methodist Church	Cedar Run, UT
VAG406353	Lewis Charles Residence	Cedar Run, UT
VAG406354	Gough Jr Ransdall	Cedar Run, UT
VAG406323	Ruiz Bernardo Residence	Cedar Run UT
VAG406317	Miles Jay Residence	Cedar Run UT
VAG406089	Wray John F Residence	Cedar Run
VAG406225	Mulatz Mary Residence	Broad Run
VAG406126	Philippy Steven J Residence	Slate Run

13. **Material Storage:** See **Attachment 4**. The sodium hypochlorite liquid is stored in a double-walled vessel, the dechlorination chemical is in tablet form and stored in its original covered container, and the lime is stored in the a shed.

14. **Site Inspection:** Performed by Beth Biller on March 27, 2008 (see **Attachment 5** for the technical inspection summary).

15. Receiving Stream Water Quality and Water Quality Standards:

a. Ambient Water Quality Data

Monitoring from Department of Environmental Quality (DEQ) freshwater probabilistic monitoring stations 1aCER002.20, off Route 619 (Izaak Walton Drive) and 1aCER005.02, downstream of Route 646, and monitoring from ambient water quality monitoring station 1aCER006.00 at Route 646 shows the following:

A bacterial impairment resulting in an impaired classification for the recreation use. A bacteria TMDL for the Cedar Run watershed has been completed and approved. The aquatic life fish consumption and wildlife uses are considered fully supporting (see **Attachment 6**, Planning Statement).

b. Receiving Stream Water Quality Criteria

Part IX of 9VAC25-260(360-550) designates classes and special standards applicable to defined Virginia river basins and sections. The receiving stream, Cedar Run, UT, is located within Section 7a of the Potomac and Shenandoah River Basin and classified as Class III water.

Class III waters must achieve a dissolved oxygen (D.O.) of 4.0 mg/L or greater, a daily average D.O. of 5.0 mg/L or greater, a temperature that does not exceed 32°C, and maintain a pH of 6.0 – 9.0 standard units (S.U.) at all times.

Attachment 7 details other water quality criteria applicable to the receiving stream.

Ammonia:
The 30Q10 and 1Q10 of the receiving stream are 0.0 MGD. In cases such as this, effluent pH and temperature data may be used to establish the ammonia water quality criteria. See **Attachment 8** for the derivation of the 90th percentile values of the effluent pH data from maximum discharge monitoring report (DMR) values from November 2005 through September 2010. The ammonia 90th percentile pH value was found to be 8.0 S.U. This value does not differ significantly from the 90th percentile value of 7.9 S.U. in the previous permit. Therefore, the current ammonia criteria will be used in this permit reissuance.

Metals Criteria:
The Water Quality Criteria for some metals are dependent on the receiving stream's hardness (expressed as mg/L calcium carbonate). The 7Q10 of the receiving stream is zero and no ambient data is available; the effluent data for hardness can be used to determine the metals criteria. The hardness-dependent metals criteria in **Attachment 7** are based on an average effluent value of 268 mg/L derived from three samples collected in July 2010.

Bacteria Criteria:
The Virginia Water Quality Standards (9VAC25-260-170.A.) establishes the following criteria to protect primary contact recreational uses:

E. coli bacteria per 100 mL of water shall not exceed the following:

	Monthly Geometric Mean[1]
Freshwater *E. coli* (N/100 mL)	126

[1]Four or more samples taken during any calendar month

c. Receiving Stream Special Standards

The State Water Control Board's Water Quality Standards, River Basin Section Tables (9VAC25-260-360, 370 and 380) designates the river basins, sections, classes, and special standards for surface waters of the Commonwealth of Virginia. The receiving stream, Cedar Run, UT, is located within Section 7a of the Potomac and Shenandoah River Basin. This section has been designated with a special standard of g.

Special Standard "g" refers to the Occoquan Watershed policy (9VAC25-410). The regulation sets stringent treatment and discharge requirements in order to improve and protect water quality, particularly since the waters are an important water supply for Northern Virginia. The regulation generally prohibits new STPs and only allows minor industrial discharges.

d. Threatened or Endangered Species

The Virginia DGIF Fish and Wildlife Information System Database was searched on October 4, 2010 for records to determine if there are threatened or endangered species in the vicinity of the discharge. The following threatened or endangered species were identified within a 2 mile radius of the discharge: the Brook Floater, the Upland Sandpiper, the Loggerhead Shrike, Henslow's Sparrow, the Bald Eagle, and the Migrant Loggerhead Shrike. The limits proposed in this draft permit are protective of the Virginia Water Quality Standards and therefore, protect the threatened and endangered species found near the discharge.

16. Antidegradation (9VAC25-260-30):

All state surface waters are provided one of three levels of antidegradation protection. For Tier 1 or existing use protection, existing uses of the water body and the water quality to protect these uses must be maintained. Tier 2 water bodies have water quality that is better than the water quality standards. Significant lowering of the water quality of Tier 2 waters is not allowed without an evaluation of the economic and social impacts. Tier 3 water bodies are exceptional waters and are so designated by regulatory amendment. The antidegradation policy prohibits new or expanded discharges into exceptional waters.

The receiving stream has been classified as Tier 1 because the stream is intermittent and therefore, has exhibited a lack of flow during drought conditions (e.g., 7Q10=0.0 MGD). Permit limits proposed have been established by determining wasteload

allocations that will result in attaining and/or maintaining all water quality criteria that apply to the receiving stream, including narrative criteria. These wasteload allocations will provide for the protection and maintenance of all existing uses.

17. Effluent Screening, Wasteload Allocation, and Effluent Limitation Development:

To determine water quality-based effluent limitations for a discharge, the suitability of data must first be determined. Data is suitable for analysis if one or more representative data points are equal to or above the quantification level ("QL") and the data represent the exact pollutant being evaluated.

Next, the appropriate Water Quality Standards (WQS) are determined for the pollutants in the effluent. Then, the Wasteload Allocations (WLAs) are calculated. In this case since the critical flows 7Q10, 1Q10, and 30Q10 have been determined to be zero, the WLAs are equal to the WQS. The WLA values are then compared with available effluent data to determine the need for effluent limitations. Effluent limitations are needed if the 97th percentile of the daily effluent concentration values is greater than the acute wasteload allocation or if the 97th percentile of the four-day average effluent concentration values is greater than the chronic wasteload allocation. In the case of ammonia evaluations, limits are needed if the 97th percentile of the thirty-day average effluent concentration value is greater than the chronic WLA. Effluent limitations are based on the most limiting WLA, the required sampling frequency and statistical characteristics of the effluent data.

a. Effluent Screening

Effluent data obtained from the discharge monitoring reports has been reviewed and determined to be suitable for evaluation. Wasteload allocation analysis must be conducted for copper and nickel because these parameters were found to be above the quantifiable limit in effluent samples.

b. Mixing Zones and Wasteload Allocations (WLAs)

Wasteload Allocations (WLAs) are calculated for those parameters in the effluent with the reasonable potential to cause an exceedance of water quality criteria. The basic calculation for establishing a WLA is the steady state complete mix equation:

$$WLA = \frac{C_o [Q_e + (f) (Q_s)] - [(C_s) (f) (Q_s)]}{Q_e}$$

Where:
- WLA = Wasteload allocation
- C_o = In-stream water quality criteria
- Q_e = Design flow
- Q_s = Critical receiving stream flow (1Q10 for acute aquatic life criteria; 7Q10 for chronic aquatic life criteria; harmonic mean for carcinogen-human health criteria; 30Q10 for ammonia criteria; and 30Q5 for non-carcinogen human health criteria)
- f = Decimal fraction of critical flow
- C_s = Mean background concentration of parameter in the receiving stream.

The water segment receiving the discharge via Outfall 001 is considered to have a 7Q10, 1Q10, and 30Q10 of 0.0 MGD. As such, there is no mixing zone and the WLA is equal to the C_o.

c. Effluent Limitations, Outfall 001 – Toxic Pollutants

9VAC25-31-220.D. requires limits be imposed where a discharge has a reasonable potential to cause or contribute to an in-stream excursion of water quality criteria. Those parameters with WLAs that are near effluent concentrations are evaluated for limits.

The VPDES Permit Regulation at 9VAC25-31-230.D. requires that monthly and weekly average limitations be imposed for continuous discharges from POTWs and monthly average and daily maximum limitations be imposed for all other continuous non-POTW discharges.

Discharge at a design flow tier of 0.04 MGD is determined to be intermittent because the treatment plant discharges only one to two times per week, whereas the discharge from design flow tiers 0.07 MGD and 0.14 MGD is determined to be continuous. Therefore, limits calculated for a flow of 0.04 MGD are based on acute criteria, and limits calculated for flows of 0.07 MGD and 0.14 MGD are based on both acute and chronic criteria.

1) Ammonia as N:
The ammonia effluent limits were re-evaluated with this permit reissuance. While the computed limits could be adjusted to be slightly more stringent at the two higher operational flow tiers, the existing limits are carried forward as they are not significantly different from the newly computed limits and the higher operational flow tiers are not likely to be recognized as the facility is being evaluated for an upgrade. Staff will revisit the ammonia limits during the next permit reissuance. Table 5 below summarizes the ammonia effluent limits.

TABLE 5
Ammonia Limits

Flow Tier (MGD)	Monthly Average (mg/L)	Weekly Average (mg/L)
0.04	4.1	4.1
0.07	1.9	2.8
0.14	1.5	2.1

2) Total Residual Chlorine:
Chlorine is used for disinfection and is potentially in the discharge. In accordance with current DEQ guidance, staff used a default data point of 0.2 mg/L and the calculated WLAs to derive limits. A monthly average of 0.009 mg/L and a weekly average limit of 0.012 mg/L are proposed for this discharge at the 0.04 MGD design flow and a monthly average of 0.008 mg/L and a weekly average of 0.010 mg/L are proposed for this discharge at the 0.07 MGD and 0.14 MGD design flows (see **Attachment 9**).

3) Metals/Organics:
The copper limits calculated for this permit reissuance using DMR data from December 2005 to August 2010 at a design flow of 0.04 MGD are a monthly and weekly average of 34 µg/L, and the limits for copper at the 0.07 and 0.14 MGD design flow tiers are a monthly and weekly average of 29 µg/L. It was shown that no limits were needed for nickel. See **Attachment 9** for the derivation of the limits.

The copper and nickel limits in the November 14, 2005 permit reissuance shown in Table 6 below are more stringent. Therefore, in accordance with the antibacksliding provision of the Clean Water Act, they will be retained in this permit reissuance. However, due to the low levels of nickel found in effluent sampling, monitoring for nickel may be reduced to once per quarter after two years of sampling at DEQ's discretion.

TABLE 6
METALS LIMITS IN PREVIOUS PERMIT REISSUANCE

Parameter	Design Flow (MGD)	Monthly Average (µg/L)	Weekly Average (µg/L)
Copper	0.04	29	29
Copper	0.07; 0.14	26	26
Nickel	0.04	360	360
Nickel	0.07; 0.14	58	58

d. Effluent Limitations and Monitoring, Outfall 001 – Conventional and Non-Conventional Pollutants

No changes to Dissolved Oxygen (D.O.), Biochemical Oxygen Demand-5 day (BOD_5), Total Suspended Solids (TSS), and pH limitations are proposed.
The BOD_5 and TSS concentrations are taken from the NPDES permit issued April 22, 1975, by EPA. No stream model information was found. At the time of issuance of the 1975 permit, this facility was considered to have a design flow of 0.14 MGD. Therefore, 0.14 MGD is considered to be the baseline flow of the facility. Design flows were tiered to 0.04 MGD and 0.07 MGD when the permit was reissued in 1994 to allow reduced monitoring. At that time and presently the discharge from this facility is low (the average daily flow is currently 0.010 MGD) and intermittent. The current BOD_5 and TSS limitations comply with the Occoquan Policy (9VAC25-410-30) and have not shown to contribute to degradation of water quality in the receiving stream. They will remain in the permit.

D.O. and pH limitations are set at the water quality criteria.

E. coli limitations are in accordance with the Water Quality Standards 9VAC25-260-170.

e. Effluent Limitations and Monitoring, Outfall 001 – Nutrients
Monitoring and effluent limitations for Nitrates + Nitrites, Total Nitrogen, and Orthophosphate were included in the previous permit reissuance to protect the Water Quality Standards of the Chesapeake Bay. There are three regulations concerning the inclusion of nutrient limitations:

- 9VAC25-40 – *Regulation for Nutrient Enriched Waters and Dischargers within the Chesapeake Bay Watershed* requires new or expanding discharges with design flows of ≥ 0.04 MGD to treat for TN and TP to either BNR levels (TN = 8 mg/L; TP = 1.0 mg/L) or SOA levels (TN = 3.0 mg/L and TP = 0.3 mg/L).

- 9VAC25-720 – *Water Quality Management Plan Regulation* sets forth TN and TP maximum wasteload allocations for facilities designated as significant discharges, i.e., those with design flows of ≥ 0.5 MGD above the fall line and ≥ 0.1 MGD below the fall line. This regulation limits the total nitrogen and total phosphorus mass loadings from these discharges.

- 9VAC25-820 – *General Virginia Pollutant Discharge Elimination System (VPDES) Watershed Permit Regulation for Total Nitrogen and Total Phosphorus Discharges and Nutrient Trading in the Chesapeake Bay Watershed in Virginia* became effective 1 January 2007. This regulation specifies and controls the nitrogen and phosphorus loadings from facilities and specifies facilities that must register under the general permit. Nutrient loadings for those facilities registered under the general permit as well as compliance schedules and other permit requirements, shall be authorized, monitored, limited, and otherwise regulated under the general permit and not this individual permit.

When the permit for USMC Camp Upshur STP was reissued on November 14, 2005, the Water Quality Management Plan Regulation (9 VAC 25-720) was in draft form and the Watershed General Permit for Total Nitrogen and Phosphorus was not available. However, the State Water Control Board had adopted new Water Quality Criteria for the Chesapeake Bay in March 2005. Therefore, monitoring for nutrient concentrations and loadings was included in the 0.04 MGD design flow tier. Additionally, a nutrient limit of 8.0 mg/L for Total Nitrogen and 1.0 mg/L for Total Phosphorus was included in the 0.07 MGD and 0.14 MGD design flow tiers.

Since this facility was considered to have a design flow of 0.14 MGD at the time of permit issuance in 1975, 0.14 MGD is considered to be the baseline flow of the facility. Thus, if the facility is built to a design flow of 0.07 MGD or 0.14 MGD this would not be considered an expansion per 9 VAC 25-40, and nutrient monitoring and limits can be removed from this permit.

e. Effluent Limitations and Monitoring Summary.
The effluent limitations are presented in the following table. Limits were established for BOD_5, TSS, Ammonia, pH, D.O., *E. Coli*, Total Residual Chlorine, Total Recoverable Copper, and Total Recoverable Nickel.

The limit for Total Suspended Solids is based on Best Professional Judgment.

The mass loading (kg/d) for monthly and weekly averages were calculated by multiplying the concentration values (mg/L), with the flow values (in MGD) and then a conversion factor of 3.785.

Sample Type and Frequency are in accordance with the recommendations in the VPDES Permit Manual.

The VPDES Permit Regulation at 9VAC25-31-30 and 40 CFR Part 133 require that the facility achieve at least 85% removal for BOD/cBOD and TSS (or 65% for equivalent to secondary). The limits in this permit are water-quality-based effluent limits and result in greater than 85% removal.

18. Antibacksliding:

The backsliding proposed with this reissuance conforms to the anti-backsliding provisions of Section 402(o) of the Clean Water Act, 9VAC25-31-220.L., and 40 CFR 122.44.

When the permit for USMC Camp Upshur STP was reissued on November 14, 2005, the Water Quality Management Plan Regulation (9 VAC 25-720) was in draft form and the Water General Permit for Total Nitrogen and Phosphorus was not available. Since that date, these regulations have become finalized.

Nutrient limits were placed in the permit for the 0.07 MGD and 0.14 MGD design flow tiers. This was a mistaken interpretation of the law because if the facility flows were to increase to these levels, it would not be considered an expansion. This facility was considered to have a design flow of 0.14 MGD at the time of permit issuance in 1975--0.14 MGD is considered to be the baseline flow of the facility. Thus, if the facility is built to a design flow of 0.07 MGD or 0.14 MGD this would not be considered an expansion per 9 VAC 25-40, and nutrient monitoring and limits can be removed from this permit.

19.a Effluent Limitations/Monitoring Requirements:

Operational Flow is 0.04 MGD/Design flow is 0.14 MGD.

Effective Dates: During the period beginning with the permit's effective date and lasting until the permit expiration date or an increase in the monthly average flow to 95% of 0.04 MGD for three consecutive months, whichever occurs first, the permittee is authorized to discharge from Outfall Number 001. Such discharges shall be limited and monitored by the permittee as specified below.

PARAMETER	BASIS FOR LIMITS	DISCHARGE LIMITATIONS				MONITORING REQUIREMENTS	
		Monthly Average	Weekly Average	Minimum	Maximum	Frequency	Sample Type
Flow (MGD)	N/A	NL	N/A	N/A	NL	1/D	Estimate
pH	1	N/A	N/A	6.0 S.U.	9.0 S.U.	1/D	Grab
BOD_5	1	10 mg/L 1.5 kg/day	15 mg/L 2.3 kg/day	N/A	N/A	1/M	Grab
Total Suspended Solids (TSS)	2	10 mg/L 1.5 kg/day	15 mg/L 2.3 kg/day	N/A	N/A	1/M	Grab
Dissolved Oxygen (DO)	1	N/A	N/A	5.0 mg/L	N/A	1/D	Grab
Ammonia, as N (mg/L)	1	4.1	4.1	N/A	N/A	1/M	Grab
E. coli (Geometric Mean)[a]	1	126 n/100 mL	N/A	N/A	N/A	1/W (10 a.m.-4:00 p.m.)	Grab
Total Residual Chlorine (after contact tank)	1	N/A	N/A	1.0 mg/L	N/A	1/D	Grab
Total Residual Chlorine (after dechlorination)	3	0.009 mg/L	0.012 mg/L	N/A	N/A	1/D	Grab
Total Recoverable Copper (µg/L)[b]	1	29	29	N/A	N/A	1/M	Grab
Total Recoverable Nickel (µg/L)[b]	1	360	360	N/A	N/A	1/M	Grab
Total Hardness (mg/L)	2	NL	NL	N/A	N/A	1/M	Grab

The basis for the limitations codes are:

1. Water Quality Standards
2. Best Professional Judgment
3. DEQ Disinfection Guidance

MGD = Million gallons per day.
N/A = Not applicable.
NL = No limit; monitor and report.
S.U. = Standard units.

1/D = Once every day.
1/M = Once every month.
1/W = Once every week.

Estimate = The reported flow if to be based on the technical evaluation of the sources contributing to the discharge.
Grab = An individual sample collected over a period of time not to exceed 15-minutes.

a. The permittee shall sample *E. coli* between 10:00 a.m. and 4:00 p.m. and submit results at the frequency of once every week for three (3) months. If all reported results for *E. coli* do not exceed 126 n/100mL, reported as the geometric mean, the permittee may submit a written request to the Department of Environmental Quality, Northern Regional Office (DEQ-NRO) for a reduction in the sampling frequency to once per quarter. Upon approval, the permittee shall collect four (4) samples during one month within each quarterly monitoring period as defined in this paragraph. Sampling shall be conducted during the calendar quarters (Jan - Mar, Apr - Jun, Jul - Sep, Oct - Dec). The results of quarterly sampling shall be received by DEQ-NRO with the DMR on April 10, July 10, October 10, and January 10. All results shall be reported as the geometric mean. If results of quarterly sampling exceed 126 n/100mL, DEQ may require the sampling frequency to revert to once every week.

b. The permittee shall conduct monthly sampling of copper and nickel for a minimum of two years. The permittee may submit a written request to the Department of Environmental Quality, Northern Regional Office (DEQ-NRO) for a reduction in the sampling frequency to once per quarter after two years of monthly sampling. Upon approval, sampling shall be conducted during the calendar quarters (Jan - Mar, Apr - Jun, Jul - Sep, Oct - Dec). The results of quarterly sampling shall be received by DEQ-NRO with the DMR on April 10, July 10, October 10, and January 10.

19.b Effluent Limitations/Monitoring Requirements:

Operational Flow is 0.07 MGD/Design flow is 0.14 MGD.

Effective Dates: When the monthly average flow reaches 95% of 0.04 MGD for three consecutive months and lasting until the permit expiration date or an increase in the monthly average flow to 95% of 0.07 MGD for three consecutive months, whichever occurs first, the permittee is authorized to discharge from Outfall Number 001. Such discharges shall be limited and monitored by the permittee as specified below.

PARAMETER	BASIS FOR LIMITS	DISCHARGE LIMITATIONS				MONITORING REQUIREMENTS	
		Monthly Average	Weekly Average	Minimum	Maximum	Frequency	Sample Type
Flow (MGD)	N/A	NL	N/A	N/A	NL	Continuous	TIRE
pH	1	N/A	N/A	6.0 S.U.	9.0 S.U.	1/D	Grab
BOD_5	1	10 mg/L 2.6 kg/day	15 mg/L 4.0 kg/day	N/A	N/A	1/W	4H-C
Total Suspended Solids (TSS)	2	10 mg/L 2.6 kg/day	15 mg/L 4.0 kg/day	N/A	N/A	1/W	4H-C
Dissolved Oxygen (DO)	1	N/A	N/A	5.0 mg/L	N/A	1/D	Grab
Ammonia, as N (mg/L)	1	1.9	2.8	N/A	N/A	1/W	4H-C
E. coli (Geometric Mean)	1	126 n/100 mL	N/A	N/A	N/A	2D/W (10 a.m.-4:00 p.m.)	Grab
Total Residual Chlorine (after contact tank)	1	N/A	N/A	1.0 mg/L	N/A	3/D at 4-hr. Intervals	Grab
Total Residual Chlorine (after dechlorination)	3	0.008 mg/L	0.010 mg/L	N/A	N/A	3/D at 4-hr. Intervals	Grab
Total Recoverable Copper (µg/L)[a]	1	26	26	N/A	N/A	1/M	Grab
Total Recoverable Nickel (µg/L)[a]	1	58	58	N/A	N/A	1/M	Grab
Total Hardness (mg/L)	2	NL	NL	N/A	N/A	1/M	Grab

The basis for the limitations codes are:

1. Water Quality Standards
2. Best Professional Judgment
3. DEQ Disinfection Guidance

MGD = Million gallons per day.
N/A = Not applicable.
NL = No limit; monitor and report.
TIRE = Totalizing, indicating and recording equipment.
S.U. = Standard units.

1/D = Once every day.
1/W = Once per week.
2D/W = Two days per week.
3/D = Three times per day.
1/M = Once every month.

4H-C = A flow proportional composite sample collected manually or automatically and discretely or continuously, for the entire discharge of the monitored 4-hour period. Where discrete sampling is employed, the permittee shall collect a minimum of four (4) aliquots for compositing. Discrete sampling may be flow proportioned either by varying the time interval between each aliquot or the volume of each aliquot. Time composite samples consisting of a minimum of four (4) grab samples obtained at hourly or smaller intervals may be collected where the permittee demonstrates that the discharge flow rate (gallons per minute) does not vary by 10% or more during the monitored discharge.

Grab = An individual sample collected over a period of time not to exceed 15-minutes.

a. The permittee shall conduct monthly sampling of copper and nickel for a minimum of two years. The permittee may submit a written request to the Department of Environmental Quality, Northern Regional Office (DEQ-NRO) for a reduction in the sampling frequency to once per quarter after two years of monthly sampling. Upon approval, sampling shall be conducted during the calendar quarters (Jan - Mar, Apr - Jun, Jul - Sep, Oct - Dec). The results of quarterly sampling shall be received by DEQ-NRO with the DMR on April 10, July 10, October 10, and January 10.

19.c Effluent Limitations/Monitoring Requirements:

Operational Flow is 0.14 MGD/Design flow is 0.14 MGD.

Effective Dates: When the monthly average flow reaches 95% of 0.07 MGD for three consecutive months and lasting until the permit expiration date, the permittee is authorized to discharge from Outfall Number 001. Such discharges shall be limited and monitored by the permittee as specified below.

PARAMETER	BASIS FOR LIMITS	DISCHARGE LIMITATIONS				MONITORING REQUIREMENTS	
		Monthly Average	Weekly Average	Minimum	Maximum	Frequency	Sample Type
Flow (MGD)	N/A	NL	N/A	N/A	NL	Continuous	TIRE
pH	1	N/A	N/A	6.0 S.U.	9.0 S.U.	1/D	Grab
BOD_5	1	10 mg/L 5.3 kg/day	15 mg/L 8.0 kg/day	N/A	N/A	3 D/W	8H-C
Total Suspended Solids (TSS)	2	10 mg/L 5.3 kg/day	15 mg/L 8.0 kg/day	N/A	N/A	3 D/W	8H-C
Dissolved Oxygen (DO)	1	N/A	N/A	5.0 mg/L	N/A	1/D	Grab
Ammonia, as N (mg/L)	1	1.5	2.1	N/A	N/A	3 D/W (10 a.m.-4:00 p.m.)	8H-C
E. coli (Geometric Mean)	1	126 n/100 mL	N/A	N/A	N/A	3 D/W	Grab
Total Residual Chlorine (after contact tank)	1	N/A	N/A	1.0 mg/L	N/A	3/D at 4-hr. Intervals	Grab
Total Residual Chlorine (after dechlorination)	3	0.0080 mg/L	0.010 mg/L	N/A	N/A	3/D at 4-hr. Intervals	Grab
Total Recoverable Copper (µg/L)[a]	1	26	26	N/A	N/A	1/M	Grab
Total Recoverable Nickel (µg/L)[a]	1	58	58	N/A	NL	1/M	Grab
Total Hardness (mg/L)	2	NL	NL	N/A	N/A	1/M	Grab

The basis for the limitations codes are:

1. Water Quality Standards
2. Best Professional Judgment
3. DEQ Disinfection Guidance

MGD = Million gallons per day.
N/A = Not applicable.
NL = No limit; monitor and report.
TIRE = Totalizing, indicating and recording equipment.
S.U. = Standard units.

1/D = Once every day.
3 D/W = Three days every week.
1/W = Once per week.
3/D = Three times per day.
1/M = Once every month.

8H-C = A flow proportional composite sample collected manually or automatically, and discretely or continuously, for the entire discharge of the monitored 8-hour period. Where discrete sampling is employed, the permittee shall collect a minimum of eight (8) aliquots for compositing. Discrete sampling may be flow proportioned either by varying the time interval between each aliquot or the volume of each aliquot. Time composite samples consisting of a minimum of eight (8) grab samples obtained at hourly or smaller intervals may be collected. Where the permittee demonstrates that the discharge flow rate (gallons per minute) does not vary by 10%r more during the monitored discharge.

Grab = An individual sample collected over a period of time not to exceed 15-minutes.

a. The permittee shall conduct monthly sampling of copper and nickel for a minimum of two years. The permittee may submit a written request to the Department of Environmental Quality, Northern Regional Office (DEQ-NRO) for a reduction in the sampling frequency to once per quarter after two years of monthly sampling. Upon approval, sampling shall be conducted during the calendar quarters (Jan - Mar, Apr - Jun, Jul - Sep, Oct - Dec). The results of quarterly sampling shall be received by DEQ-NRO with the DMR on April 10, July 10, October 10, and January 10.

20. Other Permit Requirements:

a. Part I.B. of the permit contains additional chlorine monitoring requirements, quantification levels and compliance reporting instructions.

These additional chlorine requirements are necessary per the Sewage Collection and Treatment Regulations at 9VAC25-70 and by the Water Quality Standards at 9VAC25-260-170. A minimum chlorine residual must be maintained at the exit of the chlorine contact tank to assure adequate disinfection. No more that 10% of the monthly test results for TRC at the exit of the chlorine contact tank shall be < 1.0 mg/L with any TRC < 0.6 mg/L considered a system failure. *E. coli* limits are defined in this section as well as monitoring requirements to take effect should an alternate means of disinfection be used.

9VAC25-31-190.L.4.c. requires an arithmetic mean for measurement averaging and 9VAC25-31-220.D. requires limits be imposed where a discharge has a reasonable potential to cause or contribute to an in-stream excursion of water quality criteria. Specific analytical methodologies for toxics are listed in this permit section as well as quantification levels (QLs) necessary to demonstrate compliance with applicable permit limitations or for use in future evaluations to determine if the pollutant has reasonable potential to cause or contribute to a violation. Required averaging methodologies are also specified.

21. Other Special Conditions:

a. 95% Capacity Reopener. The VPDES Permit Regulation at 9VAC25-31-200.B.4. requires all POTWs and PVOTWs develop and submit a plan of action to DEQ when the monthly average influent flow to their sewage treatment plant reaches 95% or more of 0.14 MGD for each month of any three consecutive month period.

b. Indirect Dischargers. Per the VPDES Permit Regulation at 9 VAC 25 31-210 and 9 VAC 25-31-220.D, this sewage treatment plant shall notify DEQ-NRO of any new introduction of pollutants into the treatment works from an indirect discharger subject to Section 301 or 306 of the Clean Water Act and the State Water Control Law and any substantial change in the volume or character of pollutants being introduced into the treatment works by a source introducing pollutants into the treatment works at the time of issuance of this permit..

c. O&M Manual Requirement. Required by the Code of Virginia §62.1-44.19; the Sewage Collection and Treatment Regulations, 9VAC25-790 and the VPDES Permit Regulation, 9VAC25-31-190.E. On or before July 10, 2011, the permittee shall submit for approval an Operations and Maintenance (O&M) Manual or a statement confirming the accuracy and completeness of the current O&M Manual to DEQ-NRO. Future changes to the facility must be addressed by the submittal of a revised O&M Manual within 90 days of the changes. Non-compliance with the O&M Manual shall be deemed a violation of the permit.

d. CTC, CTO Requirement. The Code of Virginia § 62.1-44.19; Sewage Collection and Treatment Regulations, 9VAC25-790 requires that all treatment works treating wastewater obtain a Certificate to Construct prior to commencing construction and to obtain a Certificate to Operate prior to commencing operation of the treatment works.

e. Licensed Operator Requirement. The Code of Virginia at §54.1-2300 et seq., the VPDES Permit Regulation at 9VAC25-31-200.C., and the Rules and Regulations for Waterworks and Wastewater Works Operators (18VAC160-20-10 et seq.) requires licensure of operators. This facility requires a Class III operator.

f. Reliability Class. The Sewage Collection and Treatment Regulations at 9VAC25-790 require sewage treatment works to achieve a certain level of reliability in order to protect water quality and public health consequences in the event of component or system failure. Reliability means a measure of the ability of the treatment works to perform its designated function without failure or interruption of service. The facility is required to meet reliability Class I based on the requirements of the Occoquan Policy (9VAC25-410).

g. Sludge Reopener. The VPDES Permit Regulation at 9VAC25-31-220.C. requires all permits issued to treatment works treating domestic sewage (including sludge-only facilities) include a reopener clause allowing incorporation of any applicable standard for sewage sludge use or disposal promulgated under Section 405(d) of the CWA. The facility includes a sewage treatment works.

h. Sludge Use and Disposal. The VPDES Permit Regulation at 9VAC25-31-100.P; 220.B.2., and 420 through 720, and 40 CFR Part 503 require all treatment works treating domestic sewage to submit information on their sludge use and disposal practices and to meet specified standards for sludge use and disposal. The facility includes a treatment works treating domestic sewage.

i. TMDL Reopener. This special condition is to allow the permit to be reopened if necessary to bring it into compliance with any applicable TMDL that may be developed and approved for the receiving stream.

22. Permit Section Part II. Part II of the permit contains standard conditions that appear in all VPDES Permits. In general, these standard conditions address the responsibilities of the permittee, reporting requirements, testing procedures and records retention.

23. Changes to the Permit from the Previously Issued Permit:

a. Special Conditions:
1) The Nutrient Reporting Calculations, Nutrient Trading and Offsets, and Nutrient Enriched Waters Reopener Special Conditions have been removed from this permit.

b. Monitoring and Effluent Limitations:
1) Nutrient monitoring and limits have been removed from the permit (see Sections 17.e and 18 of this Fact Sheet for an explanation of changes).
2) *E. coli* monitoring frequency has been changed to coincide with current DEQ guidance.
3) Total Recoverable Nickel monitoring may be reduced to a monitoring frequency of once per quarter after two years of monitoring at DEQ's discretion.
4) The sample type for flow at the 0.04 MGD design flow tier has been changed from totalizing, indicating, and recording equipment to estimate and the sample frequency has been changed from continuous to once per day.
5) Hardness monitoring has been added.

24. Variances/Alternate Limits or Conditions: None

25. **Public Notice Information:**

First Public Notice Date: 2/23/2011 Second Public Notice Date: 3/2/2011

Public Notice Information is required by 9VAC25-31-280 B. All pertinent information is on file and may be inspected and copied by contacting the: DEQ Northern Regional Office, 13901 Crown Court, Woodbridge, VA 22193, Telephone No. (703) 583-5837 or anna.westernik@deq.virginia.gov. See **Attachment 10** for a copy of the public notice document.

Persons may comment in writing or by email to the DEQ on the proposed permit action, and may request a public hearing, during the comment period. Comments shall include the name, address, and telephone number of the writer and of all persons represented by the commenter/requester, and shall contain a complete, concise statement of the factual basis for comments. Only those comments received within this period will be considered. The DEQ may decide to hold a public hearing, including another comment period, if public response is significant and there are substantial, disputed issues relevant to the permit. Requests for public hearings shall state 1) the reason why a hearing is requested; 2) a brief, informal statement regarding the nature and extent of the interest of the requester or of those represented by the requester, including how and to what extent such interest would be directly and adversely affected by the permit; and 3) specific references, where possible, to terms and conditions of the permit with suggested revisions. Following the comment period, the Board will make a determination regarding the proposed permit action. This determination will become effective, unless the DEQ grants a public hearing. Due notice of any public hearing will be given. The public may request an electronic copy of the draft permit and fact sheet or review the draft permit and application at the DEQ Northern Regional Office by appointment.

26. 303 (d) Listed Stream Segments and Total Max. Daily Loads (TMDL):

The receiving stream, an unnamed tributary of Cedar Run, is not on the 303(d) list. However, Segment VAN-A18R_CER01A02 of Cedar Run is listed as impaired in the 2010 water quality assessment for not meeting the recreation use due to excursions from the maximum E. Coli bacteria criterion at DEQ's ambient water quality monitoring station (1aCER006.00) at the Route 646 crossing. A bacteria TMDL for the Cedar Run watershed has been completed and approved by EPA on July 6, 2004. There is an E. Coli WLA of 6.97E+10 cfu/year for this permit in the completed TMDL (see **Attachment 6**, Planning Statement).

27. Additional Comments:

Previous Board Action(s): None

Staff Comments: None

Public Comment: One public comment in favor of the permit reissuance was received on February 24, 2011.

EPA Checklist: The checklist can be found in **Attachment 11**.

Attachments

Attachment 1	Flow Frequency Determination
Attachment 2	Facility Schematic/Diagram
Attachment 3	Nokesville Topographic May (195A)
Attachment 4	Material Storage
Attachment 5	Site Inspection
Attachment 6	Planning Statement
Attachment 7	Water Quality Criteria and Wasteload Allocations
Attachment 8	Derivation of 90th Percentile pH and Temperature Values
Attachment 9	Derivation of Permit Limits
Attachment 10	Public Notice
Attachment 11	EPA Checklist

Attachment 1

MEMORANDUM

DEPARTMENT OF ENVIRONMENTAL QUALITY
Office of Water Quality Assessments
629 East Main Street P.O. Box 10009 Richmond, Virginia 23219

SUBJECT: Flow Frequency Determination
Camp Upshur STP – #VA0028371

TO: Anna Tuthill Westernik, NRO

FROM: Paul E. Herman, P.E., WQAP

DATE: November 19, 1999

COPIES: Ron Gregory, Charles Martin, File

The Camp Upshur STP discharges to an unnamed tributary (UT) of Cedar Run near Aden, VA. Stream flow frequencies are required at this site for use by the permit writer in developing effluent limitations for the VPDES permit.

At the discharge point, the unnamed tributary appears as an intermittent stream on the USGS Nokesville Quadrangle topographic map. The flow frequencies for intermittent streams are 0.0 cfs for the 1q10, 7Q10, 30Q5, high flow 1Q10, high flow 7Q10, and the harmonic mean. For modeling purposes, flow frequencies have been determined for the first perennial portion of the stream below the outfall. The first perennial reach occurs in Cedar Run at the confluence with the UT receiving the Upshur discharge.

The VDEQ operates a continuous record gage on the Cedar Run near Aden, VA (#01656100) from 1972 to 1986 and from 1996 to present. The gage is located at the Route 611 bridge approximately 3.0 miles upstream from the confluence point. The flow frequencies for the gage and the confluence point on the Cedar Run are presented below. The values at the confluence point were determined by drainage area proportions and do not address any withdrawals, discharges, or springs lying between the gage and the confluence point.

Cedar Run near Aden, VA (#01656100):

Drainage Area = 155 mi^2

1Q10 = 0.39 cfs	High Flow 1Q10 = 7.4 cfs
7Q10 = 0.54 cfs	High Flow 7Q10 = 10.5 cfs
30Q5 = 1.4 cfs	HM = 8.6 cfs

Cedar Run at confluence point:

Drainage Area = 167.46 mi^2

1Q10 = 0.42 cfs	High Flow 1Q10 = 8.0 cfs
7Q10 = 0.58 cfs	High Flow 7Q10 = 11.3 cfs
30Q5 = 1.5 cfs	HM = 9.3 cfs

The high flow months are December through April. If you have any questions concerning this analysis, please let me know.

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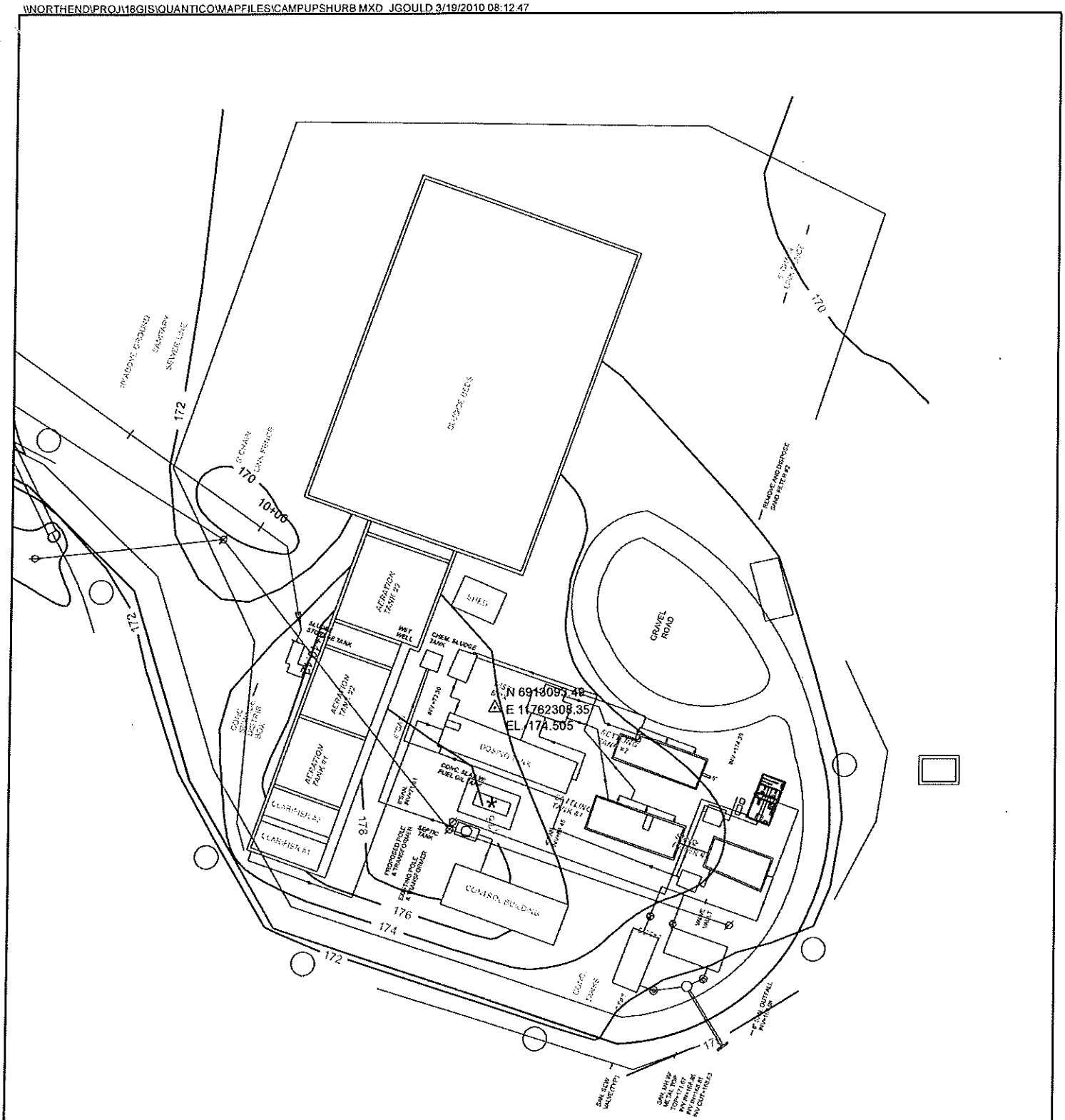

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Attachment B
Camp Upshur STP WWTP Detail Map

Attachment 2

1 inch = 40 feet

0 20 40 80 Feet

Note: Elevation contours are provided at 2-feet intervals

CH2MHILL

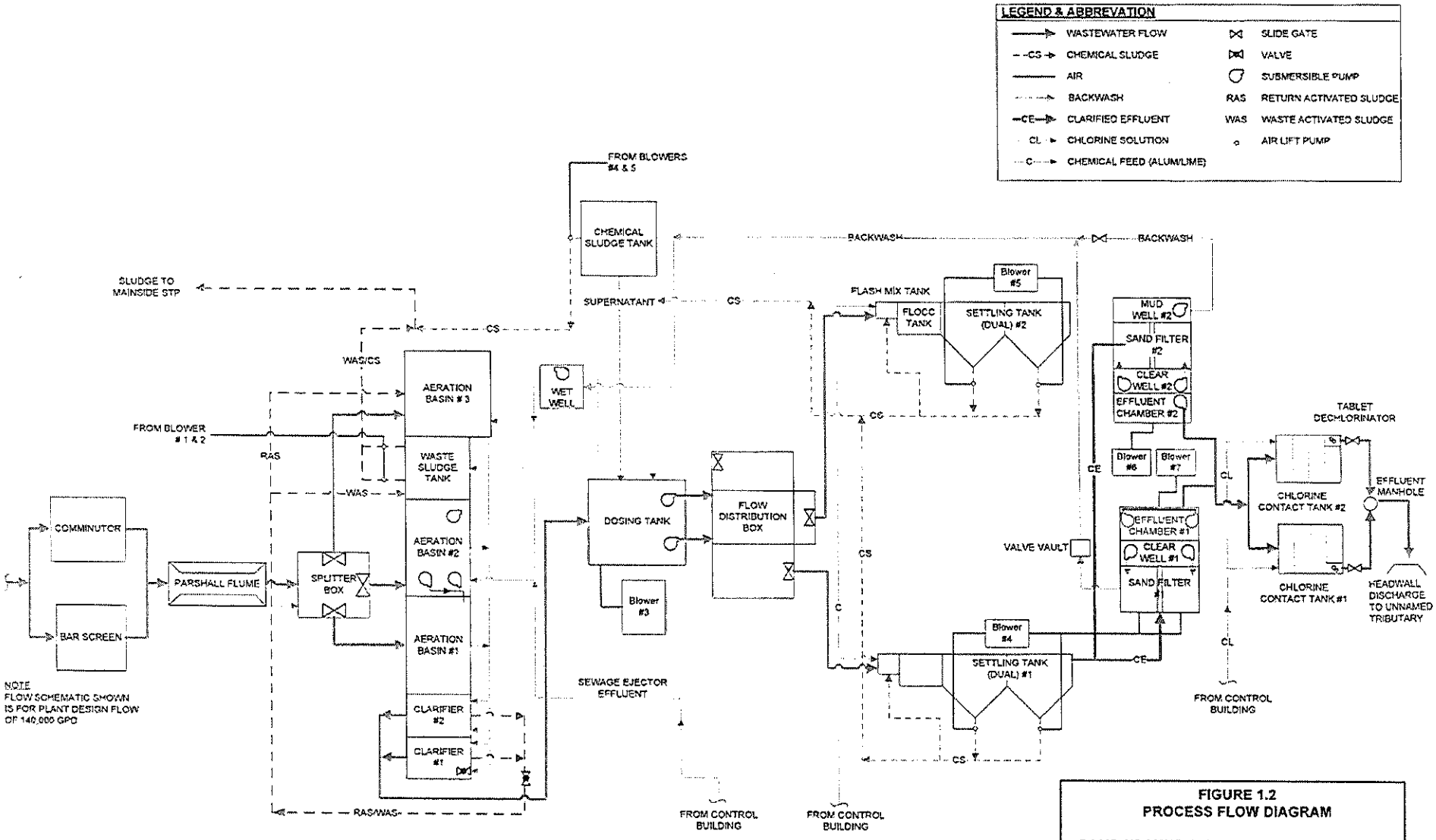

FIGURE 1.2
PROCESS FLOW DIAGRAM

CAMP UPSHUR SEWAGE TREATMENT PLANT
MCCDC, QUANTICO, VA

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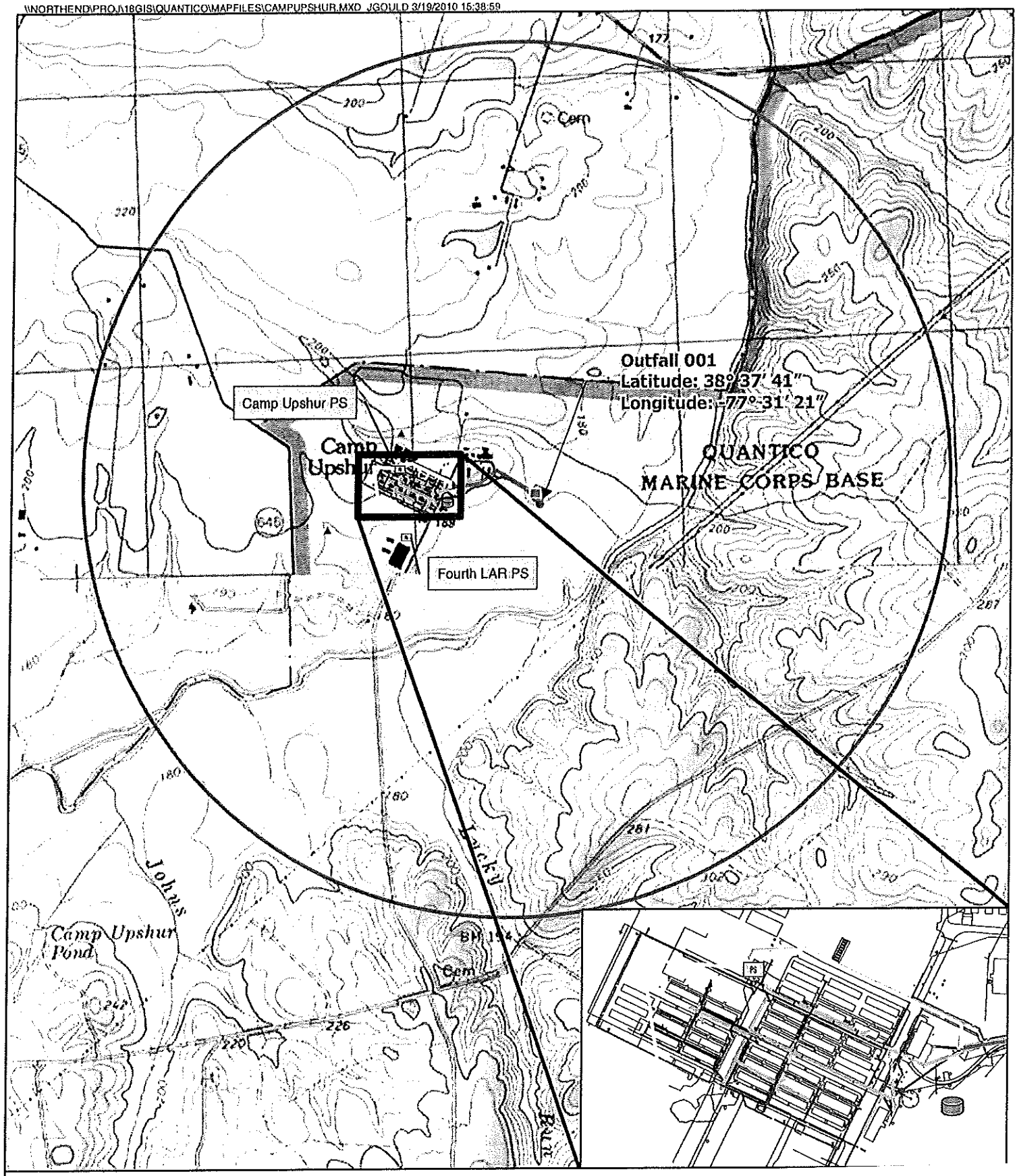


Legend

- One Mile Radius
- Outfall Location
- Water Tank
- Pump Station
- WWTP
- Drinking Water Wells
- Gravity Main
- Force Main

Camp Upshur Utilities

- Storm Mains
- Water Mains
- Sewer Mains

N

1 inch = 1,500 feet

0 750 1,500 Feet

USGS Quads:
Somerville
Nokesville

Attachment 3

CH2MHILL

Table A 3-9 Camp Upshur Sewage Treatment Plant ERAP – Building 2666

EMERGENCY CLASSIFICATIONS

Work Station Spills – Can be contained, controlled, cleaned up and disposed properly by area personnel

Localized spills/releases during routine operations:

- ≤25-gallons petroleum product
- ≤CERCLA, RCRA, or EHS RQ

Has no potential and has not entered a sanitary sewer, storm sewer, other water body, air or soil

Emergency Incident – Cannot be contained and controlled by area personnel; requires MCB Fire Dept.

Spills/releases during routine operations:

- Oily sheen on water body
- >25-gallons petroleum product
- >CERCLA, RCRA, or EHS RQ
  - Sodium Hypochlorite - EHS RQ = N/A; CERCLA RQ = 100 lbs

For these reporting quantities, the following releases are considered reportable under federal regulations, even if the material does not leave the containment area:

- Sodium Hypochlorite – any release of 9.9 gallons or more

Fire or other emergency incident
Has potential or has entered a sanitary sewer, storm sewer, other water body, air or soil

EMERGENCY INCIDENT NOTIFICATIONS:		
	MCB Quantico Fire Department:	911
	NREA QI:	784-4030
	CDO:	784-2797

CAMP UPSHUR STP GENERAL INFORMATON

This facility provides wastewater treatment for operations at Camp Upshur, Building 2666 contains the laboratory/control room, the emergency generator, a toilet, and the chlorine room. The plant is located a short distance north of Cedar Run. The facility employs liquid Sodium Hypochlorite for chlorination processes and stores this product in a 100 gallon tank. The site is enclosed by a chain link fence.

Safety features at the Mainside Sewage Treatment Plant (MSTP) include telephones for communication and a fire extinguisher. This building is not equipped with an automatic or manual sprinkler system, heat, or smoke detectors.

INVENTORY SPILL PREDICTION AND RESPONSE STRATEGIES:

Storage Unit	Capacity (gal)	Contents	Secondary Containment	Ultimate Receptor	Response Strategy
2666	500	Diesel	Double walled	NE to intermittent stream to Cedar Run to Occoquan Reservoir	Contain all product; block downstream stormwater discharge sites
Product	**Capacity (gal)**	**Location**			
Liquid Sodium Hypochlorite	100 gal. tank	Building 2666			
Dechlorination Chemicals	Buckets	Building 2666			

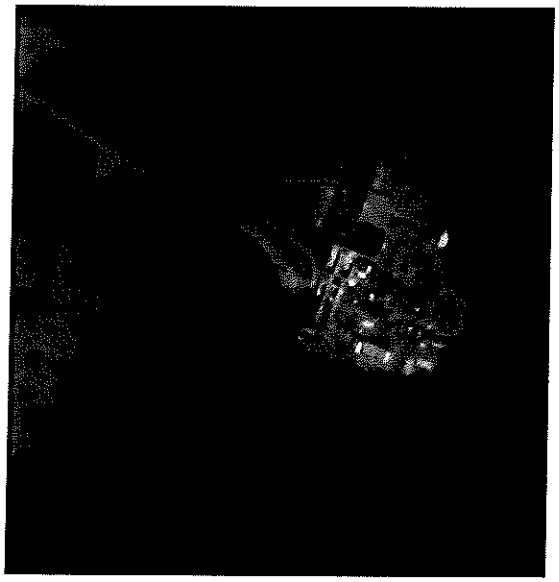
Table A 3-9 Camp Upshur Sewage Treatment Plant ERAP – Building 2666

FACILITY OPERATIONS:

Supplies and materials are delivered to the STP by truck and handled on site by hand.

A worst case discharge at the Camp Upshur STP would be the catastrophic rupture of the 500 gal. diesel tank within Building 2666.. The scenario with the greatest health and safety impact would be that the rupture would cause a release of the chemicals for sewage treatment contained within Building 2666.

CAMP UPSHUR SEWAGE TREATMENT PLANT LOCATION MAP



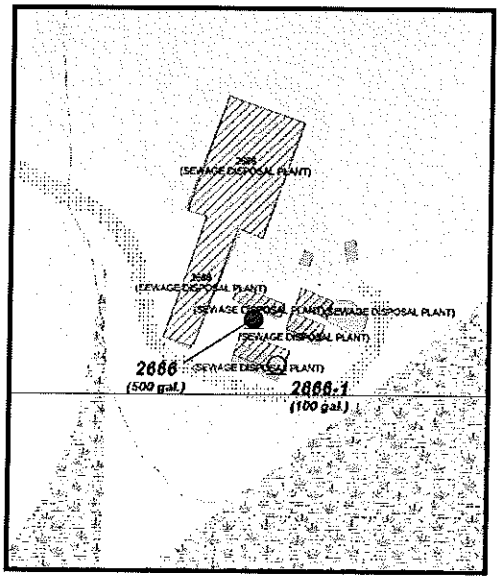
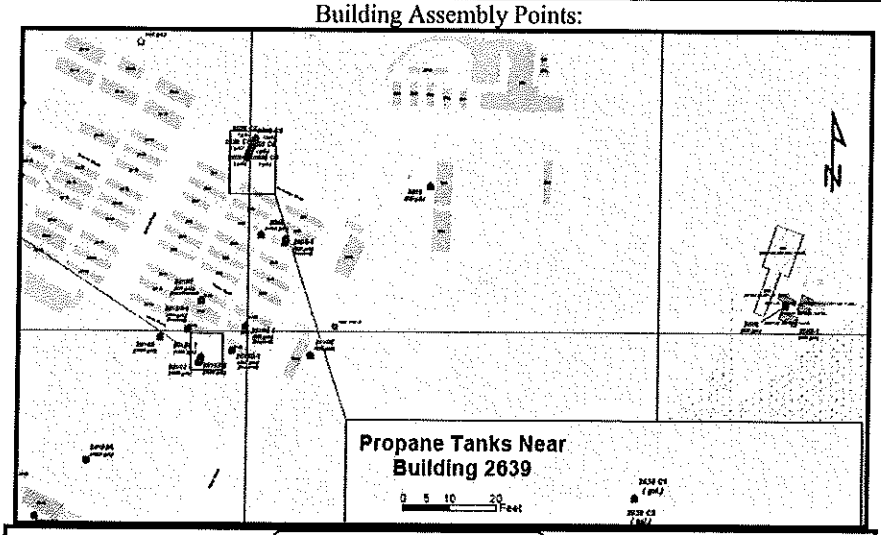
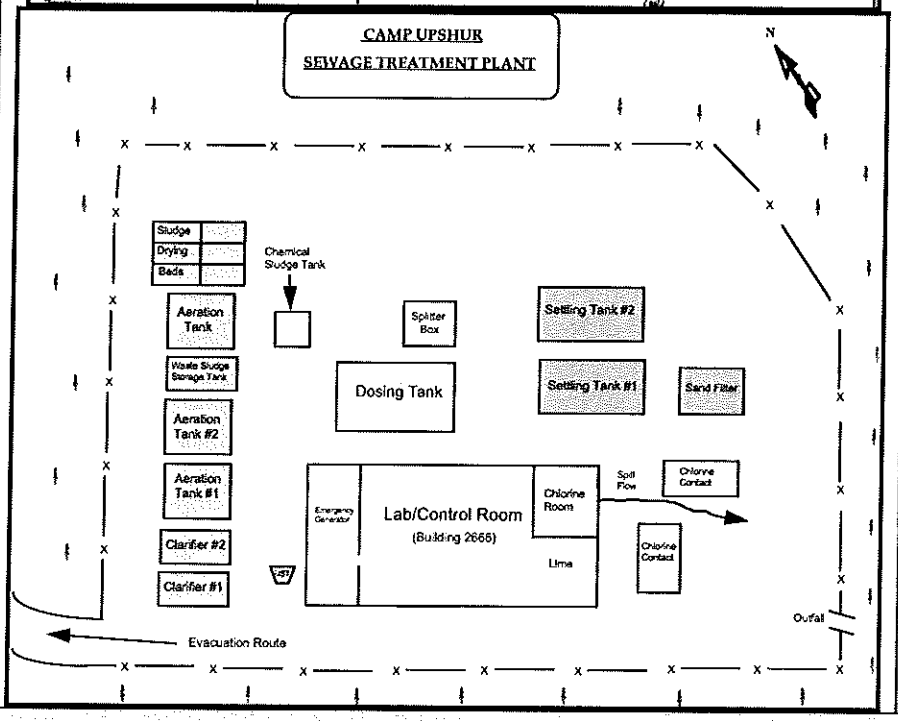


Table A 3-9 Camp Upshur Sewage Treatment Plant ERAP – Building 2666

EMERGENCY EVACUATION:

Building Assembly Points:





In the event of an evacuation from the Camp Upshur STP, employees can use the main access gate on the western side of the facility.

The primary evacuation route should be west out the main gate up the unimproved gravel road for 0.2 miles to Bailey Street, the primary assembly area.

A second evacuation route would be north moving cross-country to the high ground overlooking the facility.

Only the primary evacuation route is accessible by road limiting the arrival routes for emergency response personnel and equipment.

SOURCE CONTROL PROCEDURES:
PROCEED ONLY IF PROPERLY TRAINED AND SAFE CONDITIONS EXIST!!

1. Stop the flow
2. Shut off / extinguish ignition source
3. Contain spill
4. Dike or cover sewers
5. Cleanup/recover spill
6. Arrange for proper disposal
7. Always document incident

Technical Inspection Summary

Comments/Recommendations for action from current inspection on March 27, 2008:

- Staff should be commended on a well maintained and clean facility.
- Please submit the updated O&M to the Northern Regional Office upon completion.
- **Please verify the number of connections to the plant.

Attachment 5

To: Anna Westernik
From: Jennifer Carlson

Date: September 13, 2010
Subject: Planning Statement for USMC Camp Upshur
Pemit No: VA0028371

Discharge Type: Municipal
Discharge Flow: 0.04 MGD with 0.07 MGD and 0.14 MGD Design Flow Tiers
Receiving Stream: Cedar Run, UT
Streamcode: 1aXBG
River Mile: 0.24
Latitude / Longitude: 38°37'38.9" / 77°31'18.6"
Waterbody ID: A18/PL40
Water Quality Standards: Class III, Section 7a, Sp. Std. g

1. Is there monitoring data for the receiving stream? No.

   - If yes, please attach latest summary.
   - If no, where is the nearest downstream monitoring station.

   The nearest downstream DEQ monitoring station with ambient water quality data is Station 1ACER006.00, located on Cedar Run at the Route 646 bridge crossing, approximately 1.4 miles downstream of Outfall 001 for VA0028371. Station 1ACER006.00 is located in assessment unit, VAN-A18R_CER01A02, which begins at the boundary of the PWS designation area, at rivermile 7.86, and continues downstream until the confluence with the Occoquan River/Lake Jackson. The following is a monitoring summary for this segment of Cedar Run, as taken for the DRAFT 2010 Integrated Assessment:

   Class III, Section 7a, special stds. g.

   DEQ freshwater probabilistic monitoring stations 1aCER002.20, off Route 619 (Izaak Walton Drive) and 1aCER005.02, downstream of Route 646, and ambient water quality monitoring station 1aCER006.00, at Route 646.

   E. coli monitoring finds a bacterial impairment, resulting in an impaired classification for the recreation use. A bacteria TMDL for the Cedar Run watershed has been completed and approved. The aquatic life. fish consumption, and wildlife uses are considered fully supporting.

2. Is the receiving stream on the current 303(d) list? No.

   - If yes, what is the impairment? N/A

Attachment 6

- Has the TMDL been prepared? N/A

- If yes, what is the WLA for the discharge? N/A

- If no, what is the schedule for the TMDL? N/A

3. If the answer to (2) above is no, is there a downstream 303(d) listed impairment? Yes.

   - If yes, what is the impairment?

   Segment VAN-A18R_CER01A02 of Cedar Run is listed as impaired for not meeting the following use:

   > Recreation Use: Sufficient excursions from the maximum *E. coli* bacteria criterion (8 of 30 samples - 26.7%) were recorded at DEQ's ambient water quality monitoring station (1aCER006.00) at the Route 646 crossing to assess this stream segment as not supporting the recreation use goal for the 2010 water quality assessment.

   - Has a TMDL been prepared? Yes.

   - Will the TMDL include the receiving stream?

   The unnamed tributary to Cedar Run was not specifically included in the bacteria TMDL, however all upstream dischargers were taken into account during TMDL development.

   - Is there a WLA for the discharge?

   Yes, VA0028371 has a WLA of **6.97E+10 cfu/year** of *E. coli* bacteria.

   - What is the schedule for the TMDL?

   EPA approved the Cedar Run Bacteria TMDL on 07/06/2004.

4. Is there monitoring or other conditions that Planning/Assessment needs in the permit?

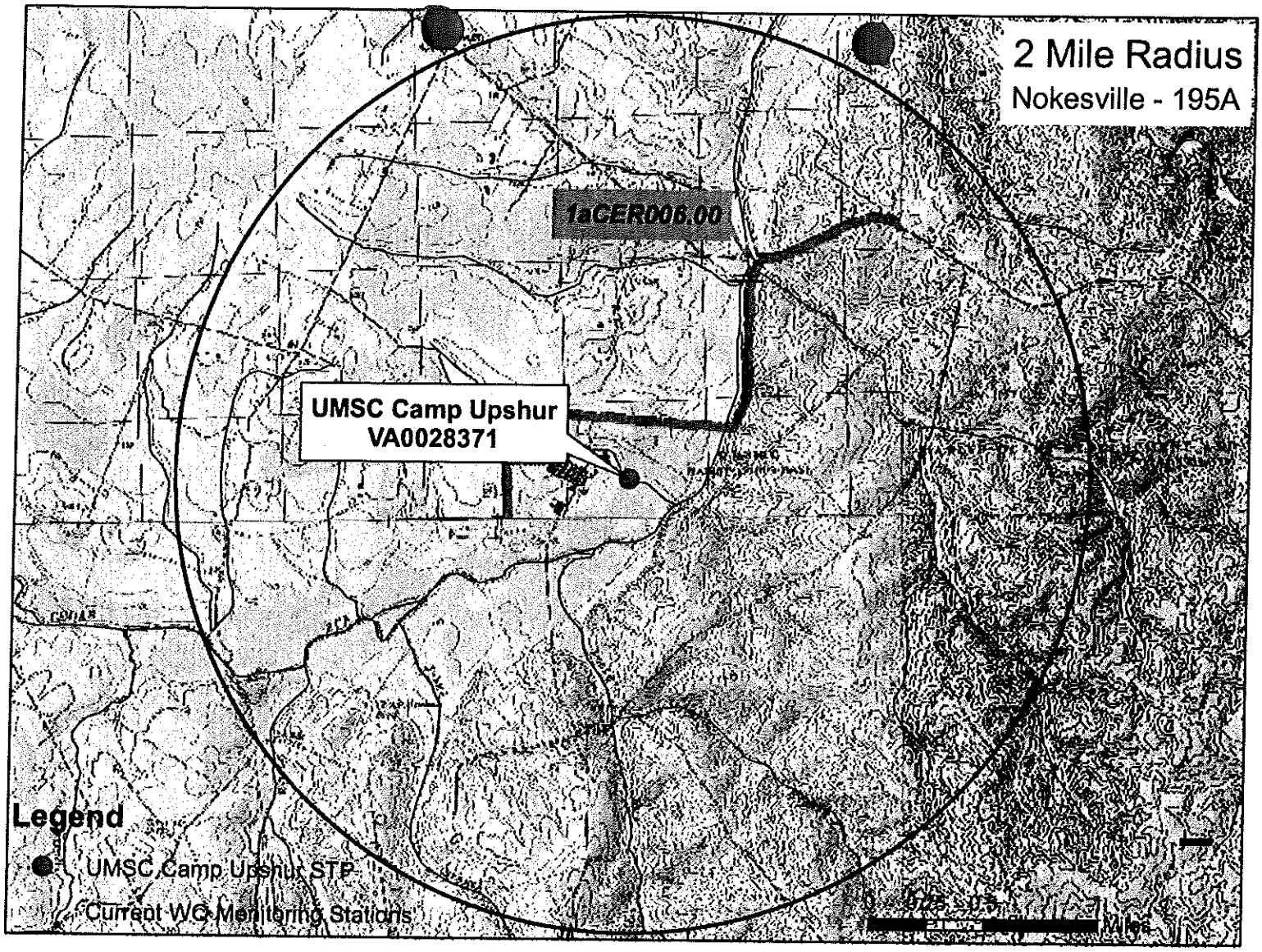
   Not at this time.

5. Could you please calculate the drainage area at the outfall?

   The drainage area at Outfall 001 is 0.41 mi^2.

6. Fact Sheet Requirements – Please provide information on other individual VPDES permits or VA DEQ monitoring stations located within a 2 mile radius of the facility. In addition, please provide information on any drinking water intakes located within a 5 mile radius of the facility.

   There are no drinking water intakes within a 5 mile radius of this facility. Within a 2 mile radius, there are no other individual VPDES permits; however, there is 1 current DEQ monitoring station: 1aCER006.00.


2 Mile Radius
Nokesville - 195A
1aCER006.00
UMSC Camp Upshur
VA0028371
Legend
UMSC Camp Upshur STP
Current WQ Monitoring Stations

FRESHWATER
WATER QUALITY CRITERIA / WASTELOAD ALLOCATION ANALYSIS

Facility Name: USMC Camp Upshur Permit No.: VA0028371

Receiving Stream: Cedar Run, UT

Version: OWP Guidance Memo 00-2011 (8/24/00)

Stream Information

Mean Hardness (as CaCO3) =	mg/L
90% Temperature (Annual) =	deg C
90% Temperature (Wet season) =	deg C
90% Maximum pH =	SU
10% Maximum pH =	SU
Tier Designation (1 or 2) =	1
Public Water Supply (PWS) Y/N? =	n
Trout Present Y/N? =	n
Early Life Stages Present Y/N? =	y

Stream Flows

1Q10 (Annual) =	0 MGD
7Q10 (Annual) =	0 MGD
30Q10 (Annual) =	0 MGD
1Q10 (Wet season) =	0 MGD
30Q10 (Wet season)	0 MGD
30Q5 =	0 MGD
Harmonic Mean =	0 MGD

Mixing Information

Annual - 1Q10 Mix =	100 %
- 7Q10 Mix =	100 %
- 30Q10 Mix =	100 %
Wet Season - 1Q10 Mix =	100 %
- 30Q10 Mix =	100 %

Effluent Information

Mean Hardness (as CaCO3) =	268 mg/L
90% Temp (Annual) =	25 deg C
90% Temp (Wet season) =	15 deg C
90% Maximum pH =	8 SU
10% Maximum pH =	7 SU
Discharge Flow =	0.04 MGD

Parameter	Background	Water Quality Criteria				Wasteload Allocations				Antidegradation Baseline				Antidegradation Allocations				Most Limiting Allocations			
(ug/l unless noted)	Conc.	Acute	Chronic	HH (PWS)	HH	Acute	Chronic	HH (PWS)	HH	Acute	Chronic	HH (PWS)	HH	Acute	Chronic	HH (PWS)	HH	Acute	Chronic	HH (PWS)	HH
Acenapthene	0	--	--	na	9.9E+02	--	--	na	9.9E+02	--	--	--	--	--	--	--	--	--	--	na	9.9E+02
Acrolein	0	--	--	na	9.3E+00	--	--	na	9.3E+00	--	--	--	--	--	--	--	--	--	--	na	9.3E+00
Acrylonitrile[C]	0	--	--	na	2.5E+00	--	--	na	2.5E+00	--	--	--	--	--	--	--	--	--	--	na	2.5E+00
Aldrin [C]	0	3.0E+00	--	na	5.0E-04	3.0E+00	--	na	5.0E-04	--	--	--	--	--	--	--	--	3.0E+00	--	na	5.0E-04
Ammonia-N (mg/l) (Yearly)	0	8.41E+00	1.24E+00	na	--	8.4E+00	1.2E+00	na	--	--	--	--	--	--	--	--	--	8.4E+00	1.2E+00	na	--
Ammonia-N (mg/l) (High Flow)	0	8.41E+00	2.36E+00	na	--	8.4E+00	2.4E+00	na	--	--	--	--	--	--	--	--	--	8.4E+00	2.4E+00	na	--
Anthracene	0	--	--	na	4.0E+04	--	--	na	4.0E+04	--	--	--	--	--	--	--	--	--	--	na	4.0E+04
Antimony	0	--	--	na	6.4E+02	--	--	na	6.4E+02	--	--	--	--	--	--	--	--	--	--	na	6.4E+02
Arsenic	0	3.4E+02	1.5E+02	na	--	3.4E+02	1.5E+02	na	--	--	--	--	--	--	--	--	--	3.4E+02	1.5E+02	na	--
Barium	0	--	--	na	--	--	--	na	--	--	--	--	--	--	--	--	--	--	--	na	--
Benzene [C]	0	--	--	na	5.1E+02	--	--	na	5.1E+02	--	--	--	--	--	--	--	--	--	--	na	5.1E+02
Benzidine[C]	0	--	--	na	2.0E-03	--	--	na	2.0E-03	--	--	--	--	--	--	--	--	--	--	na	2.0E-03
Benzo (a) anthracene [C]	0	--	--	na	1.8E-01	--	--	na	1.8E-01	--	--	--	--	--	--	--	--	--	--	na	1.8E-01
Benzo (b) fluoranthene [C]	0	--	--	na	1.8E-01	--	--	na	1.8E-01	--	--	--	--	--	--	--	--	--	--	na	1.8E-01
Benzo (k) fluoranthene [C]	0	--	--	na	1.8E-01	--	--	na	1.8E-01	--	--	--	--	--	--	--	--	--	--	na	1.8E-01
Benzo (a) pyrene [C]	0	--	--	na	1.8E-01	--	--	na	1.8E-01	--	--	--	--	--	--	--	--	--	--	na	1.8E-01
Bis2-Chloroethyl Ether[C]	0	--	--	na	5.3E+00	--	--	na	5.3E+00	--	--	--	--	--	--	--	--	--	--	na	5.3E+00
Bis2-Chloroisopropyl Ether	0	--	--	na	6.5E+04	--	--	na	6.5E+04	--	--	--	--	--	--	--	--	--	--	na	6.5E+04
Bis 2-Ethylhexyl Phthalate[C]	0	--	--	na	2.2E+01	--	--	na	2.2E+01	--	--	--	--	--	--	--	--	--	--	na	2.2E+01
Bromoform [C]	0	--	--	na	1.4E+03	--	--	na	1.4E+03	--	--	--	--	--	--	--	--	--	--	na	1.4E+03
Butylbenzylphthalate	0	--	--	na	1.9E+03	--	--	na	1.9E+03	--	--	--	--	--	--	--	--	--	--	na	1.9E+03
Cadmium	0	1.2E+01	2.5E+00	na	--	1.2E+01	2.5E+00	na	--	--	--	--	--	--	--	--	--	1.2E+01	2.5E+00	na	--
Carbon Tetrachloride [C]	0	--	--	na	1.6E+01	--	--	na	1.6E+01	--	--	--	--	--	--	--	--	--	--	na	1.6E+01
Chlordane [C]	0	2.4E+00	4.3E-03	na	8.1E-03	2.4E+00	4.3E-03	na	8.1E-03	--	--	--	--	--	--	--	--	2.4E+00	4.3E-03	na	8.1E-03
Chloride	0	8.6E+05	2.3E+05	na	--	8.6E+05	2.3E+05	na	--	--	--	--	--	--	--	--	--	8.6E+05	2.3E+05	na	--

Parameter	Background	Water Quality Criteria				Wasteload Allocations				Antidegradation Baseline				Antidegradation Allocations				Most Limiting Allocations			
(ug/l unless noted)	Conc.	Acute	Chronic	HH (PWS)	HH	Acute	Chronic	HH (PWS)	HH	Acute	Chronic	HH (PWS)	HH	Acute	Chronic	HH (PWS)	HH	Acute	Chronic	HH (PWS)	HH
Chlorodibromomethane[C]	0	--	--	na	1.3E+02	--	--	na	1.3E+02	--	--	--	--	--	--	--	--	--	--	na	1.3E+02
Chloroform	0	--	--	na	1.1E+04	--	--	na	1.1E+04	--	--	--	--	--	--	--	--	--	--	na	1.1E+04
2-Chloronaphthalene	0	--	--	na	1.6E+03	--	--	na	1.6E+03	--	--	--	--	--	--	--	--	--	--	na	1.6E+03
2-Chlorophenol	0	--	--	na	1.5E+02	--	--	na	1.5E+02	--	--	--	--	--	--	--	--	--	--	na	1.5E+02
Chlorpyrifos	0	8.3E-02	4.1E-02	na	--	8.3E-02	4.1E-02	na	--	--	--	--	--	--	--	--	--	8.3E-02	4.1E-02	na	--
Chromium III	0	1.3E+03	1.7E+02	na	--	1.3E+03	1.7E+02	na	--	--	--	--	--	--	--	--	--	1.3E+03	1.7E+02	na	--
Chromium VI	0	1.6E+01	1.1E+01	na	--	1.6E+01	1.1E+01	na	--	--	--	--	--	--	--	--	--	1.6E+01	1.1E+01	na	--
Chromium, Total	0	--	--	1.0E+02	--	--	--	na	--	--	--	--	--	--	--	--	--	--	--	na	--
Chrysene[C]	0	--	--	na	1.8E-02	--	--	na	1.8E-02	--	--	--	--	--	--	--	--	--	--	na	1.8E-02
Copper	0	3.4E+01	2.1E+01	na	--	3.4E+01	2.1E+01	na	--	--	--	--	--	--	--	--	--	3.4E+01	2.1E+01	na	--
Cyanide, Free	0	2.2E+01	5.2E+00	na	1.6E+04	2.2E+01	5.2E+00	na	1.6E+04	--	--	--	--	--	--	--	--	2.2E+01	5.2E+00	na	1.6E+04
DDD[C]	0	--	--	na	3.1E-03	--	--	na	3.1E-03	--	--	--	--	--	--	--	--	--	--	na	3.1E-03
DDE[C]	0	--	--	na	2.2E-03	--	--	na	2.2E-03	--	--	--	--	--	--	--	--	--	--	na	2.2E-03
DDT[C]	0	1.1E+00	1.0E-03	na	2.2E-03	1.1E+00	1.0E-03	na	2.2E-03	--	--	--	--	--	--	--	--	1.1E+00	1.0E-03	na	2.2E-03
Demeton	0	--	1.0E-01	na	--	--	1.0E-01	na	--	--	--	--	--	--	--	--	--	--	1.0E-01	na	--
Diazinon	0	1.7E-01	1.7E-01	na	--	1.7E-01	1.7E-01	na	--	--	--	--	--	--	--	--	--	1.7E-01	1.7E-01	na	--
Dibenz(a,h)anthracene[C]	0	--	--	na	1.8E-01	--	--	na	1.8E-01	--	--	--	--	--	--	--	--	--	--	na	1.8E-01
1,2-Dichlorobenzene	0	--	--	na	1.3E+03	--	--	na	1.3E+03	--	--	--	--	--	--	--	--	--	--	na	1.3E+03
1,3-Dichlorobenzene	0	--	--	na	9.6E+02	--	--	na	9.6E+02	--	--	--	--	--	--	--	--	--	--	na	9.6E+02
1,4-Dichlorobenzene	0	--	--	na	1.9E+02	--	--	na	1.9E+02	--	--	--	--	--	--	--	--	--	--	na	1.9E+02
3,3-Dichlorobenzidine[C]	0	--	--	na	2.8E-01	--	--	na	2.8E-01	--	--	--	--	--	--	--	--	--	--	na	2.8E-01
Dichlorobromomethane[C]	0	--	--	na	1.7E+02	--	--	na	1.7E+02	--	--	--	--	--	--	--	--	--	--	na	1.7E+02
1,2-Dichloroethane[C]	0	--	--	na	3.7E+02	--	--	na	3.7E+02	--	--	--	--	--	--	--	--	--	--	na	3.7E+02
1,1-Dichloroethylene	0	--	--	na	7.1E+03	--	--	na	7.1E+03	--	--	--	--	--	--	--	--	--	--	na	7.1E+03
1,2-trans-dichloroethylene	0	--	--	na	1.0E+04	--	--	na	1.0E+04	--	--	--	--	--	--	--	--	--	--	na	1.0E+04
2,4-Dichlorophenol	0	--	--	na	2.9E+02	--	--	na	2.9E+02	--	--	--	--	--	--	--	--	--	--	na	2.9E+02
2,4-Dichlorophenoxy acetic acid (2,4-D)	0	--	--	na	--	--	--	na	--	--	--	--	--	--	--	--	--	--	--	na	--
1,2-Dichloropropane[C]	0	--	--	na	1.5E+02	--	--	na	1.5E+02	--	--	--	--	--	--	--	--	--	--	na	1.5E+02
1,3-Dichloropropene[C]	0	--	--	na	2.1E+02	--	--	na	2.1E+02	--	--	--	--	--	--	--	--	--	--	na	2.1E+02
Dieldrin[C]	0	2.4E-01	5.6E-02	na	5.4E-04	2.4E-01	5.6E-02	na	5.4E-04	--	--	--	--	--	--	--	--	2.4E-01	5.6E-02	na	5.4E-04
Diethyl Phthalate	0	--	--	na	4.4E+04	--	--	na	4.4E+04	--	--	--	--	--	--	--	--	--	--	na	4.4E+04
2,4-Dimethylphenol	0	--	--	na	8.5E+02	--	--	na	8.5E+02	--	--	--	--	--	--	--	--	--	--	na	8.5E+02
Dimethyl Phthalate	0	--	--	na	1.1E+06	--	--	na	1.1E+06	--	--	--	--	--	--	--	--	--	--	na	1.1E+06
Di-n-Butyl Phthalate	0	--	--	na	4.5E+03	--	--	na	4.5E+03	--	--	--	--	--	--	--	--	--	--	na	4.5E+03
2,4 Dinitrophenol	0	--	--	na	5.3E+03	--	--	na	5.3E+03	--	--	--	--	--	--	--	--	--	--	na	5.3E+03
2-Methyl-4,6-Dinitrophenol	0	--	--	na	2.8E+02	--	--	na	2.8E+02	--	--	--	--	--	--	--	--	--	--	na	2.8E+02
2,4-Dinitrotoluene[C]	0	--	--	na	3.4E+01	--	--	na	3.4E+01	--	--	--	--	--	--	--	--	--	--	na	3.4E+01
Dioxin 2,3,7,8-tetrachlorodibenzo-p-dioxin	0	--	--	na	5.1E-08	--	--	na	5.1E-08	--	--	--	--	--	--	--	--	--	--	na	5.1E-08
1,2-Diphenylhydrazine[C]	0	--	--	na	2.0E+00	--	--	na	2.0E+00	--	--	--	--	--	--	--	--	--	--	na	2.0E+00
Alpha-Endosulfan	0	2.2E-01	5.6E-02	na	8.9E+01	2.2E-01	5.6E-02	na	8.9E+01	--	--	--	--	--	--	--	--	2.2E-01	5.6E-02	na	8.9E+01
Beta-Endosulfan	0	2.2E-01	5.6E-02	na	8.9E+01	2.2E-01	5.6E-02	na	8.9E+01	--	--	--	--	--	--	--	--	2.2E-01	5.6E-02	na	8.9E+01
Alpha + Beta Endosulfan	0	2.2E-01	5.6E-02	--	--	2.2E-01	5.6E-02	--	--	--	--	--	--	--	--	--	--	2.2E-01	5.6E-02	--	--
Endosulfan Sulfate	0	--	--	na	8.9E+01	--	--	na	8.9E+01	--	--	--	--	--	--	--	--	--	--	na	8.9E+01
Endrin	0	8.6E-02	3.6E-02	na	6.0E-02	8.6E-02	3.6E-02	na	6.0E-02	--	--	--	--	--	--	--	--	8.6E-02	3.6E-02	na	6.0E-02

Parameter (ug/l unless noted)	Background Conc.	Water Quality Criteria				Wasteload Allocations				Antidegradation Baseline				Antidegradation Allocations				Most Limiting Allocations			
		Acute	Chronic	HH (PWS)	HH	Acute	Chronic	HH (PWS)	HH	Acute	Chronic	HH (PWS)	HH	Acute	Chronic	HH (PWS)	HH	Acute	Chronic	HH (PWS)	HH
Ethylbenzene	0	--	--	na	2.1E+03	--	--	na	2.1E+03	--	--	--	--	--	--	--	--	--	--	na	2.1E+03
Fluoranthene	0	--	--	na	1.4E+02	--	--	na	1.4E+02	--	--	--	--	--	--	--	--	--	--	na	1.4E+02
Fluorene	0	--	--	na	5.3E+03	--	--	na	5.3E+03	--	--	--	--	--	--	--	--	--	--	na	5.3E+03
Foaming Agents	0	--	--	na	--	--	--	na	--	--	--	--	--	--	--	--	--	--	--	na	--
Guthion	0	--	1.0E-02	na	--	--	1.0E-02	na	--	--	--	--	--	--	--	--	--	--	1.0E-02	na	--
Heptachlor [C]	0	5.2E-01	3.8E-03	na	7.9E-04	5.2E-01	3.8E-03	na	7.9E-04	--	--	--	--	--	--	--	--	5.2E-01	3.8E-03	na	7.9E-04
Heptachlor Epoxide [C]	0	5.2E-01	3.8E-03	na	3.9E-04	5.2E-01	3.8E-03	na	3.9E-04	--	--	--	--	--	--	--	--	5.2E-01	3.8E-03	na	3.9E-04
Hexachlorobenzene [C]	0	--	--	na	2.9E-03	--	--	na	2.9E-03	--	--	--	--	--	--	--	--	--	--	na	2.9E-03
Hexachlorobutadiene [C]	0	--	--	na	1.8E+02	--	--	na	1.8E+02	--	--	--	--	--	--	--	--	--	--	na	1.8E+02
Hexachlorocyclohexane Alpha-BHC [C]	0	--	--	na	4.9E-02	--	--	na	4.9E-02	--	--	--	--	--	--	--	--	--	--	na	4.9E-02
Hexachlorocyclohexane Beta-BHC [C]	0	--	--	na	1.7E-01	--	--	na	1.7E-01	--	--	--	--	--	--	--	--	--	--	na	1.7E-01
Hexachlorocyclohexane Gamma-BHC [C] (Lindane)	0	9.5E-01	na	na	1.8E+00	9.5E-01	--	na	1.8E+00	--	--	--	--	--	--	--	--	9.5E-01	--	na	1.8E+00
Hexachlorocyclopentadiene	0	--	--	na	1.1E+03	--	--	na	1.1E+03	--	--	--	--	--	--	--	--	--	--	na	1.1E+03
Hexachloroethane [C]	0	--	--	na	3.3E+01	--	--	na	3.3E+01	--	--	--	--	--	--	--	--	--	--	na	3.3E+01
Hydrogen Sulfide	0	--	2.0E+00	na	--	--	2.0E+00	na	--	--	--	--	--	--	--	--	--	--	2.0E+00	na	--
Indeno (1,2,3-cd) pyrene [C]	0	--	--	na	1.8E-01	--	--	na	1.8E-01	--	--	--	--	--	--	--	--	--	--	na	1.8E-01
Iron	0	--	--	na	--	--	--	na	--	--	--	--	--	--	--	--	--	--	--	na	--
Isophorone [C]	0	--	--	na	9.6E+03	--	--	na	9.6E+03	--	--	--	--	--	--	--	--	--	--	na	9.6E+03
Kepone	0	--	0.0E+00	na	--	--	0.0E+00	na	--	--	--	--	--	--	--	--	--	--	0.0E+00	na	--
Lead	0	4.2E+02	4.7E+01	na	--	4.2E+02	4.7E+01	na	--	--	--	--	--	--	--	--	--	4.2E+02	4.7E+01	na	--
Malathion	0	--	1.0E-01	na	--	--	1.0E-01	na	--	--	--	--	--	--	--	--	--	--	1.0E-01	na	--
Manganese	0	--	--	na	--	--	--	na	--	--	--	--	--	--	--	--	--	--	--	na	--
Mercury	0	1.4E+00	7.7E-01	--	--	1.4E+00	7.7E-01	--	--	--	--	--	--	--	--	--	--	1.4E+00	7.7E-01	--	--
Methyl Bromide	0	--	--	na	1.5E+03	--	--	na	1.5E+03	--	--	--	--	--	--	--	--	--	--	na	1.5E+03
Methylene Chloride [C]	0	--	--	na	5.9E+03	--	--	na	5.9E+03	--	--	--	--	--	--	--	--	--	--	na	5.9E+03
Methoxychlor	0	--	3.0E-02	na	--	--	3.0E-02	na	--	--	--	--	--	--	--	--	--	--	3.0E-02	na	--
Mirex	0	--	0.0E+00	na	--	--	0.0E+00	na	--	--	--	--	--	--	--	--	--	--	0.0E+00	na	--
Nickel	0	4.2E+02	4.7E+01	na	4.6E+03	4.2E+02	4.7E+01	na	4.6E+03	--	--	--	--	--	--	--	--	4.2E+02	4.7E+01	na	4.6E+03
Nitrate (as N)	0	--	--	na	--	--	--	na	--	--	--	--	--	--	--	--	--	--	--	na	--
Nitrobenzene	0	--	--	na	6.9E+02	--	--	na	6.9E+02	--	--	--	--	--	--	--	--	--	--	na	6.9E+02
N-Nitrosodimethylamine [C]	0	--	--	na	3.0E+01	--	--	na	3.0E+01	--	--	--	--	--	--	--	--	--	--	na	3.0E+01
N-Nitrosodiphenylamine [C]	0	--	--	na	6.0E+01	--	--	na	6.0E+01	--	--	--	--	--	--	--	--	--	--	na	6.0E+01
N-Nitrosodi-n-propylamine [C]	0	--	--	na	5.1E+00	--	--	na	5.1E+00	--	--	--	--	--	--	--	--	--	--	na	5.1E+00
Nonylphenol	0	2.8E+01	6.6E+00	--	--	2.8E+01	6.6E+00	na	--	--	--	--	--	--	--	--	--	2.8E+01	6.6E+00	na	--
Parathion	0	6.5E-02	1.3E-02	na	--	6.5E-02	1.3E-02	na	--	--	--	--	--	--	--	--	--	6.5E-02	1.3E-02	na	--
PCB Total [C]	0	--	1.4E-02	na	6.4E-04	--	1.4E-02	na	6.4E-04	--	--	--	--	--	--	--	--	--	1.4E-02	na	6.4E-04
Pentachlorophenol [C]	0	8.7E+00	6.7E+00	na	3.0E+01	8.7E+00	6.7E+00	na	3.0E+01	--	--	--	--	--	--	--	--	8.7E+00	6.7E+00	na	3.0E+01
Phenol	0	--	--	na	8.6E+05	--	--	na	8.6E+05	--	--	--	--	--	--	--	--	--	--	na	8.6E+05
Pyrene	0	--	--	na	4.0E+03	--	--	na	4.0E+03	--	--	--	--	--	--	--	--	--	--	na	4.0E+03
Radionuclides	0	--	--	na	--	--	--	na	--	--	--	--	--	--	--	--	--	--	--	na	--
Gross Alpha Activity (pCi/L)	0	--	--	na	--	--	--	na	--	--	--	--	--	--	--	--	--	--	--	na	--
Beta and Photon Activity (mrem/yr)	0	--	--	na	4.0E+00	--	--	na	4.0E+00	--	--	--	--	--	--	--	--	--	--	na	4.0E+00

Parameter (ug/l unless noted)	Background Conc.	Water Quality Criteria				Wasteload Allocations				Antidegradation Baseline				Antidegradation Allocations				Most Limiting Allocations			
		Acute	Chronic	HH (PWS)	HH	Acute	Chronic	HH (PWS)	HH	Acute	Chronic	HH (PWS)	HH	Acute	Chronic	HH (PWS)	HH	Acute	Chronic	HH (PWS)	HH
Selenium, Total Recoverable	0	2.0E+01	5.0E+00	na	4.2E+03	2.0E+01	5.0E+00	na	4.2E+03	--	--	--	--	--	--	--	--	2.0E+01	5.0E+00	na	4.2E+03
Silver	0	1.9E+01	--	na	--	1.9E+01	--	na	--	--	--	--	--	--	--	--	--	1.9E+01	--	na	--
Sulfate	0	--	--	na	--	--	--	na	--	--	--	--	--	--	--	--	--	--	--	na	--
1,1,2,2-Tetrachloroethane[C]	0	--	--	na	4.0E+01	--	--	na	4.0E+01	--	--	--	--	--	--	--	--	--	--	na	4.0E+01
Tetrachloroethylene[C]	0	--	--	na	3.3E+01	--	--	na	3.3E+01	--	--	--	--	--	--	--	--	--	--	na	3.3E+01
Thallium	0	--	--	na	4.7E-01	--	--	na	4.7E-01	--	--	--	--	--	--	--	--	--	--	na	4.7E-01
Toluene	0	--	--	na	6.0E+03	--	--	na	6.0E+03	--	--	--	--	--	--	--	--	--	--	na	6.0E+03
Total dissolved solids	0	--	--	na	--	--	--	na	--	--	--	--	--	--	--	--	--	--	--	na	--
Toxaphene [C]	0	7.3E-01	2.0E-04	na	2.8E-03	7.3E-01	2.0E-04	na	2.8E-03	--	--	--	--	--	--	--	--	7.3E-01	2.0E-04	na	2.8E-03
Tributyltin	0	4.6E-01	7.2E-02	na	--	4.6E-01	7.2E-02	na	--	--	--	--	--	--	--	--	--	4.6E-01	7.2E-02	na	--
1,2,4-Trichlorobenzene	0	--	--	na	7.0E+01	--	--	na	7.0E+01	--	--	--	--	--	--	--	--	--	--	na	7.0E+01
1,1,2-Trichloroethane[C]	0	--	--	na	1.6E+02	--	--	na	1.6E+02	--	--	--	--	--	--	--	--	--	--	na	1.6E+02
Trichloroethylene [C]	0	--	--	na	3.0E+02	--	--	na	3.0E+02	--	--	--	--	--	--	--	--	--	--	na	3.0E+02
2,4,6-Trichlorophenol [C]	0	--	--	na	2.4E+01	--	--	na	2.4E+01	--	--	--	--	--	--	--	--	--	--	na	2.4E+01
2-(2,4,5-Trichlorophenoxy) propionic acid (Silvex)	0	--	--	na	--	--	--	na	--	--	--	--	--	--	--	--	--	--	--	na	--
Vinyl Chloride[C]	0	--	--	na	2.4E+01	--	--	na	2.4E+01	--	--	--	--	--	--	--	--	--	--	na	2.4E+01
Zinc	0	2.7E+02	2.7E+02	na	2.6E+04	2.7E+02	2.7E+02	na	2.6E+04	--	--	--	--	--	--	--	--	2.7E+02	2.7E+02	na	2.6E+04

Notes:

1. All concentrations expressed as micrograms/liter (ug/l), unless noted otherwise
2. Discharge flow is highest monthly average or Form 2C maximum for Industries and design flow for Municipals
3. Metals measured as Dissolved, unless specified otherwise
4. "C" indicates a carcinogenic parameter
5. Regular WLAs are mass balances (minus background concentration) using the % of stream flow entered above under Mixing Information.
   Antidegradation WLAs are based upon a complete mix.
6. Antideg. Baseline = (0.25(WQC - background conc.) + background conc.) for acute and chronic
   = (0.1(WQC - background conc.) + background conc.) for human health
7. WLAs established at the following stream flows: 1Q10 for Acute, 30Q10 for Chronic Ammonia, 7Q10 for Other Chronic, 30Q5 for Non-carcinogens and Harmonic Mean for Carcinogens. To apply mixing ratios from a model set the stream flow equal to (mixing ratio - 1), effluent flow equal to 1 and 100% mix.

Metal	Target Value (SSTV)
Antimony	6.4E+02
Arsenic	9.0E+01
Barium	na
Cadmium	1.5E+00
Chromium III	1.0E+02
Chromium VI	6.4E+00
Copper	1.2E+01
Iron	na
Lead	2.8E+01
Manganese	na
Mercury	4.6E-01
Nickel	2.8E+01
Selenium	3.0E+00
Silver	7.5E+00
Zinc	1.1E+02

Note: do not use QL's lower than the minimum QL's provided in agency guidance

0.040 MGD DISCHARGE FLOW - STREAM MIX PER "Mix.exe"

Discharge Flow Used for WQS-WLA Calculations (MGI 0.040

	Stream Flows Allocated to Mix (MGD)		Total Mix Flows Stream + Discharge (MGD)	
	Dry Season	Wet Season	Dry Season	Wet Season
1Q10	0.000	0.000	0.040	0.040
7Q10	0.000	N/A	0.040	N/A
30Q10	0.000	0.000	0.040	0.040
30Q5	0.000	N/A	0.040	N/A
Harm. Mean	0.000	N/A	0.040	N/A
Annual Avg.	0.000	N/A	0.040	N/A

Stream/Discharge Mix Values

	Dry Season	Wet Season
1Q10 90th% Temp. Mix (deg C)	25.000	15.000
30Q10 90th% Temp. Mix (deg C)	25.000	15.000
1Q10 90th% pH Mix (SU)	8.000	8.000
30Q10 90th% pH Mix (SU)	8.000	8.000
1Q10 10th% pH Mix (SU)	7.000	N/A
7Q10 10th% pH Mix (SU)	7.000	N/A

	Calculated	Formula Inputs
1Q10 Hardness (mg/L as CaCO3)	268.0	268.0
7Q10 Hardness (mg/L as CaCO3)	268.0	268.0

Ammonia - Dry Season - Acute

90th Percentile pH (SU)	8.000
(7.204 - pH)	-0.796
(pH - 7.204)	0.796
Trout Present Criterion (mg N/	5.615
Trout Absent Criterion (mg N/L	8.408
Trout Present?	n
Effective Criterion (mg N/L)	8.408

Ammonia - Dry Season - Chronic

90th Percentile Temp. (deg C)	25.000
90th Percentile pH (SU)	8.000
MIN	1.450
MAX	25.000
(7.688 - pH)	-0.312
(pH - 7.688)	0.312
Early LS Present Criterion (mg N	1.238
Early LS Absent Criterion (mg N.	1.238
Early Life Stages Present?	y
Effective Criterion (mg N/L)	1.238

Ammonia - Wet Season - Acute

90th Percentile pH (SU)	8.000
(7.204 - pH)	-0.796
(pH - 7.204)	0.796
Trout Present Criterion (mg N/	5.615
Trout Absent Criterion (mg N/L	8.408
Trout Present?	n
Effective Criterion (mg N/L)	8.408

Ammonia - Wet Season - Chronic

90th Percentile Temp. (deg C)	15.000
90th Percentile pH (SU)	8.000
MIN	2.763
MAX	15.000
(7.688 - pH)	-0.312
(pH - 7.688)	0.312
Early LS Present Criterion (mg N	2.359
Early LS Absent Criterion (mg N.	2.359
Early Life Stages Present?	y
Effective Criterion (mg N/L)	2.359

0.040 MGD DISCHARGE FLOW - COMPLETE STREAM MIX

Discharge Flow Used for WQS-WLA Calculations (MGI 0.040

	100% Stream Flows Allocated to Mix (MGD)		Total Mix Flows Stream + Discharge (MGD)	
	Dry Season	Wet Season	Dry Season	Wet Season
1Q10	0.000	0.000	0.040	0.040
7Q10	0.000	N/A	0.040	N/A
30Q10	0.000	0.000	0.040	0.040
30Q5	0.000	N/A	0.040	N/A
Harm. Mean	0.000	N/A	0.040	N/A
Annual Avg.	0.000	N/A	0.040	N/A

Stream/Discharge Mix Values

	Dry Season	Wet Season
1Q10 90th% Temp. Mix (deg C)	25.000	15.000
30Q10 90th% Temp. Mix (deg C)	25.000	15.000
1Q10 90th% pH Mix (SU)	8.000	8.000
30Q10 90th% pH Mix (SU)	8.000	8.000
1Q10 10th% pH Mix (SU)	7.000	N/A
7Q10 10th% pH Mix (SU)	7.000	N/A

	Calculated	Formula Inputs
1Q10 Hardness (mg/L as CaCO3) =	268.000	268.000
7Q10 Hardness (mg/L as CaCO3) =	268.000	268.000

Ammonia - Dry Season - Acute

90th Percentile pH (SU)	8.000
(7.204 - pH)	-0.796
(pH - 7.204)	0.796
Trout Present Criterion (mg N/	5.615
Trout Absent Criterion (mg N/L	8.408
Trout Present?	n
Effective Criterion (mg N/L)	8.408

Ammonia - Dry Season - Chronic

90th Percentile Temp. (deg C)	25.000
90th Percentile pH (SU)	8.000
MIN	1.450
MAX	25.000
(7.688 - pH)	-0.312
(pH - 7.688)	0.312
Early LS Present Criterion (mg N	1.238
Early LS Absent Criterion (mg N.	1.238
Early Life Stages Present?	y
Effective Criterion (mg N/L)	1.238

Ammonia - Wet Season - Acute

90th Percentile pH (SU)	8.000
(7.204 - pH)	-0.796
(pH - 7.204)	0.796
Trout Present Criterion (mg N/	5.615
Trout Absent Criterion (mg N/L	8.408
Trout Present?	n
Effective Criterion (mg N/L)	8.408

Ammonia - Wet Season - Chronic

90th Percentile Temp. (deg C)	15.000
90th Percentile pH (SU)	8.000
MIN	2.763
MAX	15.000
(7.688 - pH)	-0.312
(pH - 7.688)	0.312
Early LS Present Criterion (mg N	2.359
Early LS Absent Criterion (mg N.	2.359
Early Life Stages Present?	y
Effective Criterion (mg N/L)	2.359

Permit #:VA0028371	USMC Quantico--Camp Upshur

Due	Outfall	Rec'd	Parameter Description	CONC MAX (S.U.)
10-Oct-2010	001	09-Oct-2010	PH	7.8
10-Sep-2010	001	08-Sep-2010	PH	7.9
10-Aug-2010	001	07-Aug-2010	PH	8.4
10-Jul-2010	001	10-Jul-2010	PH	7.9
10-Jun-2010	001	10-Jun-2010	PH	8
10-May-2010	001	10-May-2010	PH	7.7
10-Apr-2010	001	08-Apr-2010	PH	7.6
10-Mar-2010	001	10-Mar-2010	PH	7.6
10-Feb-2010	001	12-Feb-2010	PH	7.5
10-Jan-2010	001	11-Jan-2010	PH	7.9
10-Dec-2009	001	10-Dec-2009	PH	7.8
10-Nov-2009	001	10-Nov-2009	PH	7.8
10-Oct-2009	001	08-Oct-2009	PH	8.4
10-Sep-2009	001	08-Sep-2009	PH	8.5
10-Aug-2009	001	10-Aug-2009	PH	7.8
10-Jul-2009	001	08-Jul-2009	PH	7.4
10-Jun-2009	001	09-Jun-2009	PH	8
10-May-2009	001	11-May-2009	PH	7.6
10-Apr-2009	001	10-Apr-2009	PH	8
10-Feb-2009	001	10-Feb-2009	PH	8.1
10-Jan-2009	001	12-Jan-2009	PH	8.1
10-Dec-2008	001	10-Dec-2008	PH	7.5
10-Nov-2008	001	12-Nov-2008	PH	7.7
10-Oct-2008	001	10-Oct-2008	PH	7.6
10-Sep-2008	001	10-Sep-2008	PH	8
10-Aug-2008	001	08-Aug-2008	PH	8.5
10-Jul-2008	001	10-Jul-2008	PH	7.2
10-Jun-2008	001	10-Jun-2008	PH	7.3
10-May-2008	001	12-May-2008	PH	7
10-Apr-2008	001	10-Apr-2008	PH	7
10-Mar-2008	001	10-Mar-2008	PH	7.1
10-Feb-2008	001	11-Feb-2008	PH	7.1
10-Jan-2008	001	10-Jan-2008	PH	7.6
10-Dec-2007	001	10-Dec-2007	PH	7.1
10-Nov-2007	001	09-Nov-2007	PH	7.1
10-Oct-2007	001	10-Oct-2007	PH	7
10-Sep-2007	001	12-Sep-2007	PH	7
10-Aug-2007	001	09-Aug-2007	PH	7
10-Jul-2007	001	10-Jul-2007	PH	7
10-Jun-2007	001	08-Jun-2007	PH	7.1
10-May-2007	001	10-May-2007	PH	7.2
10-Apr-2007	001	09-Apr-2007	PH	7.1
10-Mar-2007	001	09-Mar-2007	PH	7.1
10-Feb-2007	001	09-Feb-2007	PH	7

Attachment 8

10-Jan-2007	001	10-Jan-2007	PH	7.2
10-Dec-2006	001	11-Dec-2006	PH	7.3
10-Nov-2006	001	09-Nov-2006	PH	7
10-Oct-2006	001	10-Oct-2006	PH	7
10-Sep-2006	001	11-Sep-2006	PH	7
10-Aug-2006	001	11-Aug-2006	PH	7.4
10-Jul-2006	001	10-Jul-2006	PH	7.2
10-Jun-2006	001	12-Jun-2006	PH	7.1
10-May-2006	001	10-May-2006	PH	7.5
10-Apr-2006	001	10-Apr-2006	PH	7.1
10-Mar-2006	001	09-Mar-2006	PH	7
10-Feb-2006	001	09-Feb-2006	PH	7.1
10-Jan-2006	001	09-Jan-2006	PH	7.4
10-Dec-2005	001	08-Dec-2005	PH	7.3
90th Percentile				**8.0**
10th Percentile				**7.0**

10/14/2010 4:26:38 PM

Facility = USMC Camp Upshur
Chemical = Ammonia (0.04 MGD)
Chronic averaging period = 30
WLAa = 8.41
WLAc =
Q.L. = .2
# samples/mo. = 1
# samples/wk. = 1

Summary of Statistics:

observations = 1
Expected Value = 9
Variance = 29.16
C.V. = 0.6
97th percentile daily values = 21.9007
97th percentile 4 day average = 14.9741
97th percentile 30 day average= 10.8544
< Q.L. = 0
Model used = BPJ Assumptions, type 2 data

A limit is needed based on Acute Toxicity
Maximum Daily Limit = 8.41
Average Weekly limit = 8.41
Average Monthly LImit = 8.41

The data are:

9

10/14/2010 4:24:27 PM

Facility = USMC Camp Upshur
Chemical = Ammonia (0.07 MGD)
Chronic averaging period = 30
WLAa = 8.41
WLAc = 1.24
Q.L. = .2
# samples/mo. = 4
# samples/wk. = 1

Summary of Statistics:

observations = 1
Expected Value = 9
Variance = 29.16
C.V. = 0.6
97th percentile daily values = 21.9007
97th percentile 4 day average = 14.9741
97th percentile 30 day average= 10.8544
< Q.L. = 0
Model used = BPJ Assumptions, type 2 data

A limit is needed based on Chronic Toxicity
Maximum Daily Limit = 2.50191091583623
Average Weekly limit = 2.50191091583623
Average Monthly LImit = 1.71062084695778

The data are:

9

10/15/2010 4:01:30 PM

Facility = USMC Camp Upshur
Chemical = Ammonia (0.14 MGD)
Chronic averaging period = 30
WLAa = 8.41
WLAc = 1.24
Q.L. = .2
# samples/mo. = 12
# samples/wk. = 3

Summary of Statistics:

observations = 1
Expected Value = 9
Variance = 29.16
C.V. = 0.6
97th percentile daily values = 21.9007
97th percentile 4 day average = 14.9741
97th percentile 30 day average= 10.8544
< Q.L. = 0
Model used = BPJ Assumptions, type 2 data

A limit is needed based on Chronic Toxicity
Maximum Daily Limit = 2.50191091583623
Average Weekly limit = 1.83000697715366
Average Monthly LImit = 1.36311600760039

The data are:

9

6/23/2005 10:10:14 AM

Facility = Camp Upshur STP
Chemical = Ammonia (0.04 MGD)
Chronic averaging period = 30
WLAa = 10.1
WLAc =
Q.L. = .2
# samples/mo. = 1
# samples/wk. = 1

Summary of Statistics:

observations = 1
Expected Value = 9
Variance = 29.16
C.V. = 0.6
97th percentile daily values = 21.9007
97th percentile 4 day average = 14.9741
97th percentile 30 day average= 10.8544
< Q.L. = 0
Model used = BPJ Assumptions, type 2 data

A limit is needed based on Acute Toxicity
Maximum Daily Limit = 10.1
Average Weekly limit = 10.1
Average Monthly LImit = 10.1

The data are:

Sample 1/W

6/22/2005 12:20:56 PM

Facility = Camp Upshur STP
Chemical = Ammonia
Chronic averaging period = 30
WLAa = 10.1
WLAc = 1.4
Q.L. = .2
# samples/mo. = 4
# samples/wk. = 1

Summary of Statistics:

observations = 1
Expected Value = 9
Variance = 29.16
C.V. = 0.6
97th percentile daily values = 21.9007
97th percentile 4 day average = 14.9741
97th percentile 30 day average= 10.8544
< Q.L. = 0
Model used = BPJ Assumptions, type 2 data

A limit is needed based on Chronic Toxicity
Maximum Daily Limit = 2.82473813078283
Average Weekly limit = 2.82473813078284
Average Monthly LImit = 1.93134611753297

The data are:

9

Sample 3x/W

6/22/2005 12:22:02 PM

Facility = Camp Upshur STP
Chemical = Ammonia
Chronic averaging period = 30
WLAa = 10.1
WLAc = 1.4
Q.L. = .2
# samples/mo. = 12
# samples/wk. = 3

Summary of Statistics:

observations = 1
Expected Value = 9
Variance = 29.16
C.V. = 0.6
97th percentile daily values = 21.9007
97th percentile 4 day average = 14.9741
97th percentile 30 day average= 10.8544
< Q.L. = 0
Model used = BPJ Assumptions, type 2 data

A limit is needed based on Chronic Toxicity
Maximum Daily Limit = 2.82473813078283
Average Weekly limit = 2.06613690968962
Average Monthly LImit = 1.53900194406496

The data are:

9

10/15/2010 1:31:21 PM

Facility = USMC Camp Upshur
Chemical = TRC (0.04 MGD)
Chronic averaging period = 4
WLAa = 19
WLAc =
Q.L. = 100
# samples/mo. = 29
# samples/wk. = 7

Summary of Statistics:

observations = 1
Expected Value = 200
Variance = 14400
C.V. = 0.6
97th percentile daily values = 486.683
97th percentile 4 day average = 332.758
97th percentile 30 day average= 241.210
< Q.L. = 0
Model used = BPJ Assumptions, type 2 data

A limit is needed based on Acute Toxicity
Maximum Daily Limit = 19
Average Weekly limit = 11.6034369282886
Average Monthly LImit = 9.44430586795087

The data are:

200

10/15/2010 1:30:59 PM

Facility = USMC Camp Upshur
Chemical = TRC (0.07 and 0.14 MGD)
Chronic averaging period = 4
WLAa = 19
WLAc = 11
Q.L. = 100
# samples/mo. = 29
# samples/wk. = 7

Summary of Statistics:

observations = 1
Expected Value = 200
Variance = 14400
C.V. = 0.6
97th percentile daily values = 486.683
97th percentile 4 day average = 332.758
97th percentile 30 day average= 241.210
< Q.L. = 0
Model used = BPJ Assumptions, type 2 data

A limit is needed based on Chronic Toxicity
Maximum Daily Limit = 16.0883226245855
Average Weekly limit = 9.82525457138611
Average Monthly LImit = 7.99700209309789

The data are:

200

9/27/2010 4:10:57 PM

Facility = USMC Camp Upshur
Chemical = Copper (0.04 MGD)
Chronic averaging period = 4
WLAa = 34
WLAc =
Q.L. = 1
# samples/mo. = 1
# samples/wk. = 1

Summary of Statistics:

observations = 12
Expected Value = 17.9538
Variance = 65.7434
C.V. = 0.451614
97th percentile daily values = 36.7959
97th percentile 4 day average = 26.6400
97th percentile 30 day average= 20.7384
< Q.L. = 0
Model used = lognormal

A limit is needed based on Acute Toxicity
Maximum Daily Limit = 34
Average Weekly limit = 34
Average Monthly LImit = 34

The data are:

12
15
11
10
21
24
20
14
13
26
10
39

9/27/2010 4:10:31 PM

Facility = USMC Camp Upshur
Chemical = Copper (0.07 and 0.14 MGD)
Chronic averaging period = 4
WLAa = 34
WLAc = 21
Q.L. = 1
# samples/mo. = 1
# samples/wk. = 1

Summary of Statistics:

observations = 12
Expected Value = 17.9538
Variance = 65.7434
C.V. = 0.451614
97th percentile daily values = 36.7959
97th percentile 4 day average = 26.6400
97th percentile 30 day average= 20.7384
< Q.L. = 0
Model used = lognormal

A limit is needed based on Chronic Toxicity
Maximum Daily Limit = 29.0057836855081
Average Weekly limit = 29.0057836855081
Average Monthly LImit = 29.0057836855081

The data are:

12
15
11
10
21
24
20
14
13
26
10
39

9/27/2010 4:14:20 PM

Facility = USMC Camp Upshur
Chemical = Nickel (0.04 MGD)
Chronic averaging period = 4
WLAa = 420
WLAc =
Q.L. = 5
# samples/mo. = 1
# samples/wk. = 1

Summary of Statistics:

observations = 2
Expected Value = 5
Variance = 9
C.V. = 0.6
97th percentile daily values = 12.1670
97th percentile 4 day average = 8.31895
97th percentile 30 day average= 6.03026
< Q.L. = 0
Model used = BPJ Assumptions, type 2 data

No Limit is required for this material

The data are:

5
5

9/27/2010 4:15:23 PM

Facility = USMC Camp Upshur
Chemical = Nickel (0.07 and 0.14 MGD)
Chronic averaging period = 4
WLAa = 420
WLAc = 47
Q.L. = 5
# samples/mo. = 1
# samples/wk. = 1

Summary of Statistics:

observations = 2
Expected Value = 5
Variance = 9
C.V. = 0.6
97th percentile daily values = 12.1670
97th percentile 4 day average = 8.31895
97th percentile 30 day average= 6.03026
< Q.L. = 0
Model used = BPJ Assumptions, type 2 data

No Limit is required for this material

The data are:

5
5

Public Notice – Environmental Permit

PURPOSE OF NOTICE: To seek public comment on a draft permit from the Department of Environmental Quality that will allow the release of treated wastewater into a water body in Prince William County Virginia.

PUBLIC COMMENT PERIOD: February 24, 2011 to 5:00 p.m. on March 25, 2011.

PERMIT NAME: Virginia Pollutant Discharge Elimination System Permit – Wastewater issued by DEQ, under the authority of the State Water Control Board

APPLICANT NAME, ADDRESS AND PERMIT NUMBER: USMC Quantico, MCB-Quantico-Camp Upshur Building 2666, Quantico, VA 22134-5001, VA0028371

NAME AND ADDRESS OF FACILITY: Camp Upshur STP, Commander, MCB Quantico, Commander, MCB Quantico c/o NREA (B046), 3049 Bordelon Street, Quantico, VA 22134-5001

PROJECT DESCRIPTION: The United States Marine Corps has applied for a reissuance of a permit for the Federal Camp Upshur Sewage Treatment Plant. The applicant proposes to release treated sewage wastewater at a rate of 0.14 million gallons per day into a water body. Sludge from the treatment process will be shipped to another sewage treatment plant for disposal. The facility proposes to release the treated sewage into an unnamed tributary of Cedar Run in Prince William County, located in the Lower Cedar Run/Town Run watershed. A watershed is the land area drained by a river and its incoming streams. The permit will limit the following pollutants to amounts that protect water quality: pH, BOD_5, Total Suspended Solids, Dissolved Oxygen, Ammonia as Nitrogen, *E. coli*, Total Residual Chlorine, Total Recoverable Copper, and Total Recoverable Nickel.

HOW TO COMMENT AND/OR REQUEST A PUBLIC HEARING: DEQ accepts comments and requests for public hearing by e-mail, fax or postal mail. All comments and requests must be in writing and be received by DEQ during the comment period. Submittals must include the names, mailing addresses and telephone numbers of the commenter/requester and of all persons represented by the commenter/requester. A request for public hearing must also include: 1) The reason why a public hearing is requested. 2) A brief, informal statement regarding the nature and extent of the interest of the requester or of those represented by the requestor, including how and to what extent such interest would be directly and adversely affected by the permit. 3) Specific references, where possible, to terms and conditions of the permit with suggested revisions. A public hearing may be held, including another comment period, if public response is significant, based on individual requests for a public hearing, and there are substantial, disputed issues relevant to the permit.

CONTACT FOR PUBLIC COMMENTS, DOCUMENT REQUESTS AND ADDITIONAL INFORMATION: The public may review the documents at the DEQ-Northern Regional Office by appointment, or may request electronic copies of the draft permit and fact sheet.
Name: Anna T. Westernik
Address: DEQ-Northern Regional Office, 13901 Crown Court, Woodbridge, VA 22193
Phone: (703) 583-3837 E-mail: anna.westernik@deq.virginia.gov Fax: (703) 583-3821

Attachment 10

Revised 2/2003

State "Transmittal Checklist" to Assist in Targeting
Municipal and Industrial Individual NPDES Draft Permits for Review

Part I. State Draft Permit Submission Checklist

In accordance with the MOA established between the Commonwealth of Virginia and the United States Environmental Protection Agency, Region III, the Commonwealth submits the following draft National Pollutant Discharge Elimination System (NPDES) permit for Agency review and concurrence.

Facility Name:	Camp Upshur STP
NPDES Permit Number:	VA0028371
Permit Writer Name:	Anna Westernik
Date:	October 7, 2010

Major [ ] **Minor** [x] **Industrial** [ ] **Municipal** [x]

I.A. Draft Permit Package Submittal Includes:	**Yes**	**No**	**N/A**
1. Permit Application?	x		
2. Complete Draft Permit (for renewal or first time permit – entire permit, including boilerplate information)?	x		
3. Copy of Public Notice?	x		
4. Complete Fact Sheet?	x		
5. A Priority Pollutant Screening to determine parameters of concern?	x		
6. A Reasonable Potential analysis showing calculated WQBELs?	x		
7. Dissolved Oxygen calculations?			x
8. Whole Effluent Toxicity Test summary and analysis?			x
9. Permit Rating Sheet for new or modified industrial facilities?			x

I.B. Permit/Facility Characteristics	**Yes**	**No**	**N/A**
1. Is this a new, or currently unpermitted facility?		x	
2. Are all permissible outfalls (including combined sewer overflow points, non-process water and storm water) from the facility properly identified and authorized in the permit?	x		
3. Does the fact sheet **or** permit contain a description of the wastewater treatment process?	x		
4. Does the review of PCS/DMR data for at least the last 3 years indicate significant non-compliance with the existing permit?		x	
5. Has there been any change in streamflow characteristics since the last permit was developed?		x	
6. Does the permit allow the discharge of new or increased loadings of any pollutants?		x	
7. Does the fact sheet **or** permit provide a description of the receiving water body(s) to which the facility discharges, including information on low/critical flow conditions and designated/existing uses?	x		
8. Does the facility discharge to a 303(d) listed water?	x		
a. Has a TMDL been developed and approved by EPA for the impaired water?	x		
b. Does the record indicate that the TMDL development is on the State priority list and will most likely be developed within the life of the permit?			x
c. Does the facility discharge a pollutant of concern identified in the TMDL or 303(d) listed water?	x		
9. Have any limits been removed, or are any limits less stringent, than those in the current permit?	x		
10. Does the permit authorize discharges of storm water?		x	

Attachment 11

I.B. Permit/Facility Characteristics – cont.	Yes	No	N/A
11. Has the facility substantially enlarged or altered its operation or substantially increased its flow or production?		x	
12. Are there any production-based, technology-based effluent limits in the permit?		x	
13. Do any water quality-based effluent limit calculations differ from the State's standard policies or procedures?		x	
14. Are any WQBELs based on an interpretation of narrative criteria?		x	
15. Does the permit incorporate any variances or other exceptions to the State's standards or regulations?		x	
16. Does the permit contain a compliance schedule for any limit or condition?		x	
17. Is there a potential impact to endangered/threatened species or their habitat by the facility's discharge(s)?		x	
18. Have impacts from the discharge(s) at downstream potable water supplies been evaluated?	x		
19. Is there any indication that there is significant public interest in the permit action proposed for this facility?		x	
20. Have previous permit, application, and fact sheet been examined?	x		

Part II. NPDES Draft Permit Checklist

Region III NPDES Permit Quality Checklist – for POTWs
(To be completed and included in the record only for POTWs)

II.A. Permit Cover Page/Administration	Yes	No	N/A
1. Does the fact sheet or permit describe the physical location of the facility, including latitude and longitude (not necessarily on permit cover page)?	x		
2. Does the permit contain specific authorization-to-discharge information (from where to where, by whom)?	x		

II.B. Effluent Limits – General Elements	Yes	No	N/A
1. Does the fact sheet describe the basis of final limits in the permit (e.g., that a comparison of technology and water quality-based limits was performed, and the most stringent limit selected)?	x		
2. Does the fact sheet discuss whether "antibacksliding" provisions were met for any limits that are less stringent than those in the previous NPDES permit?	x		

II.C. Technology-Based Effluent Limits (POTWs)	Yes	No	N/A
1. Does the permit contain numeric limits for ALL of the following: BOD (or alternative, e.g., CBOD, COD, TOC), TSS, and pH?	x		
2. Does the permit require at least 85% removal for BOD (or BOD alternative) and TSS (or 65% for equivalent to secondary) consistent with 40 CFR Part 133?	x		
a. If no, does the record indicate that application of WQBELs, or some other means, results in more stringent requirements than 85% removal or that an exception consistent with 40 CFR 133.103 has been approved?			x
3. Are technology-based permit limits expressed in the appropriate units of measure (e.g., concentration, mass, SU)?	x		
4. Are permit limits for BOD and TSS expressed in terms of both long term (e.g., average monthly) and short term (e.g., average weekly) limits?	x		
5. Are any concentration limitations in the permit less stringent than the secondary treatment requirements (30 mg/l BOD5 and TSS for a 30-day average and 45 mg/l BOD5 and TSS for a 7-day average)?		x	
a. If yes, does the record provide a justification (e.g., waste stabilization pond, trickling filter, etc.) for the alternate limitations?			x

II.D. Water Quality-Based Effluent Limits	Yes	No	N/A
1. Does the permit include appropriate limitations consistent with 40 CFR 122.44(d) covering State narrative and numeric criteria for water quality?	x		
2. Does the fact sheet indicate that any WQBELs were derived from a completed and EPA approved TMDL?		x	
3. Does the fact sheet provide effluent characteristics for each outfall?	x		
4. Does the fact sheet document that a "reasonable potential" evaluation was performed?	x		
a. If yes, does the fact sheet indicate that the "reasonable potential" evaluation was performed in accordance with the State's approved procedures?	x		
b. Does the fact sheet describe the basis for allowing or disallowing in-stream dilution or a mixing zone?	x		
c. Does the fact sheet present WLA calculation procedures for all pollutants that were found to have "reasonable potential"?	x		
d. Does the fact sheet indicate that the "reasonable potential" and WLA calculations accounted for contributions from upstream sources (i.e., do calculations include ambient/background concentrations)?		x	
e. Does the permit contain numeric effluent limits for all pollutants for which "reasonable potential" was determined?	x		

II.D. Water Quality-Based Effluent Limits – cont.	Yes	No	N/A
5. Are all final WQBELs in the permit consistent with the justification and/or documentation provided in the fact sheet?	x		
6. For all final WQBELs, are BOTH long-term AND short-term effluent limits established?	x		
7. Are WQBELs expressed in the permit using appropriate units of measure (e.g., mass, concentration)?	x		
8. Does the record indicate that an "antidegradation" review was performed in accordance with the State's approved antidegradation policy?	x		

II.E. Monitoring and Reporting Requirements	Yes	No	N/A
1. Does the permit require at least annual monitoring for all limited parameters and other monitoring as required by State and Federal regulations?	x		
a. If no, does the fact sheet indicate that the facility applied for and was granted a monitoring waiver, AND, does the permit specifically incorporate this waiver?			
2. Does the permit identify the physical location where monitoring is to be performed for each outfall?	x		
3. Does the permit require at least annual influent monitoring for BOD (or BOD alternative) and TSS to assess compliance with applicable percent removal requirements?		x	
4. Does the permit require testing for Whole Effluent Toxicity?		x	

II.F. Special Conditions	Yes	No	N/A
1. Does the permit include appropriate biosolids use/disposal requirements?	x		
2. Does the permit include appropriate storm water program requirements?			x

II.F. Special Conditions – cont.	Yes	No	N/A
3. If the permit contains compliance schedule(s), are they consistent with statutory and regulatory deadlines and requirements?			x
4. Are other special conditions (e.g., ambient sampling, mixing studies, TIE/TRE, BMPs, special studies) consistent with CWA and NPDES regulations?	x		
5. Does the permit allow/authorize discharge of sanitary sewage from points other than the POTW outfall(s) or CSO outfalls [i.e., Sanitary Sewer Overflows (SSOs) or treatment plant bypasses]?		x	
6. Does the permit authorize discharges from Combined Sewer Overflows (CSOs)?		x	
a. Does the permit require implementation of the "Nine Minimum Controls"?			x
b. Does the permit require development and implementation of a "Long Term Control Plan"?			x
c. Does the permit require monitoring and reporting for CSO events?			x
7. Does the permit include appropriate Pretreatment Program requirements?			x

II.G. Standard Conditions	Yes	No	N/A
1. Does the **permit** contain all 40 CFR 122.41 standard conditions or the State equivalent (or more stringent) conditions?	x		

List of Standard Conditions – 40 CFR 122.41

Duty to comply	Property rights	Reporting Requirements
Duty to reapply	Duty to provide information	Planned change
Need to halt or reduce activity not a defense	Inspections and entry	Anticipated noncompliance
	Monitoring and records	Transfers
Duty to mitigate	Signatory requirement	Monitoring reports
Proper O & M	Bypass	Compliance schedules
Permit actions	Upset	24-Hour reporting
		Other non-compliance

2. Does the permit contain the additional standard condition (or the State equivalent or more stringent conditions) for POTWs regarding notification of new introduction of pollutants and new industrial users [40 CFR 122.42(b)]?	x		

Part II. NPDES Draft Permit Checklist

Region III NPDES Permit Quality Review Checklist – For Non-Municipals
(To be completed and included in the record for all non-POTWs)

II.A. Permit Cover Page/Administration	Yes	No	N/A
1. Does the fact sheet **or** permit describe the physical location of the facility, including latitude and longitude (not necessarily on permit cover page)?			
2. Does the permit contain specific authorization-to-discharge information (from where to where, by whom)?			

II.B. Effluent Limits – General Elements	Yes	No	N/A
1. Does the fact sheet describe the basis of final limits in the permit (e.g., that a comparison of technology and water quality-based limits was performed, and the most stringent limit selected)?			
2. Does the fact sheet discuss whether "antibacksliding" provisions were met for any limits that are less stringent than those in the previous NPDES permit?			

II.C. Technology-Based Effluent Limits (Effluent Guidelines & BPJ)	Yes	No	N/A
1. Is the facility subject to a national effluent limitations guideline (ELG)?			
a. If yes, does the record adequately document the categorization process, including an evaluation of whether the facility is a new source or an existing source?			
b. If no, does the record indicate that a technology-based analysis based on Best Professional Judgement (BPJ) was used for all pollutants of concern discharged at treatable concentrations?			
2. For all limits developed based on BPJ, does the record indicate that the limits are consistent with the criteria established at 40 CFR 125.3(d)?			
3. Does the fact sheet adequately document the calculations used to develop both ELG and /or BPJ technology-based effluent limits?			
4. For all limits that are based on production or flow, does the record indicate that the calculations are based on a "reasonable measure of ACTUAL production" for the facility (not design)?			
5. Does the permit contain "tiered" limits that reflect projected increases in production or flow?			
a. If yes, does the permit require the facility to notify the permitting authority when alternate levels of production or flow are attained?			
6. Are technology-based permit limits expressed in appropriate units of measure (e.g., concentration, mass, SU)?			
7. Are all technology-based limits expressed in terms of both maximum daily, weekly average, and/or monthly average limits?			
8. Are any final limits less stringent than required by applicable effluent limitations guidelines or BPJ?			

II.D. Water Quality-Based Effluent Limits	Yes	No	N/A
1. Does the permit include appropriate limitations consistent with 40 CFR 122.44(d) covering State narrative and numeric criteria for water quality?			
2. Does the record indicate that any WQBELs were derived from a completed and EPA approved TMDL?			
3. Does the fact sheet provide effluent characteristics for each outfall?			
4. Does the fact sheet document that a "reasonable potential" evaluation was performed?			
a. If yes, does the fact sheet indicate that the "reasonable potential" evaluation was performed in accordance with the State's approved procedures?			
b. Does the fact sheet describe the basis for allowing or disallowing in-stream dilution or a mixing zone?			

II.D. Water Quality-Based Effluent Limits – cont.	Yes	No	N/A
c. Does the fact sheet present WLA calculation procedures for all pollutants that were found to have "reasonable potential"?			
d. Does the fact sheet indicate that the "reasonable potential" and WLA calculations accounted for contributions from upstream sources (i.e., do calculations include ambient/background concentrations where data are available)?			
e. Does the permit contain numeric effluent limits for all pollutants for which "reasonable potential" was determined?			
5. Are all final WQBELs in the permit consistent with the justification and/or documentation provided in the fact sheet?			
6. For all final WQBELs, are BOTH long-term (e.g., average monthly) AND short-term (e.g., maximum daily, weekly average, instantaneous) effluent limits established?			
7. Are WQBELs expressed in the permit using appropriate units of measure (e.g., mass, concentration)?			
8. Does the fact sheet indicate that an "antidegradation" review was performed in accordance with the State's approved antidegradation policy?			

II.E. Monitoring and Reporting Requirements	Yes	No	N/A
1. Does the permit require at least annual monitoring for all limited parameters?			
a. If no, does the fact sheet indicate that the facility applied for and was granted a monitoring waiver, AND, does the permit specifically incorporate this waiver?			
2. Does the permit identify the physical location where monitoring is to be performed for each outfall?			
3. Does the permit require testing for Whole Effluent Toxicity in accordance with the State's standard practices?			

II.F. Special Conditions	Yes	No	N/A
1. Does the permit require development and implementation of a Best Management Practices (BMP) plan or site-specific BMPs?			
a. If yes, does the permit adequately incorporate and require compliance with the BMPs?			
2. If the permit contains compliance schedule(s), are they consistent with statutory and regulatory deadlines and requirements?			
3. Are other special conditions (e.g., ambient sampling, mixing studies, TIE/TRE, BMPs, special studies) consistent with CWA and NPDES regulations?			

II.G. Standard Conditions	Yes	No	N/A
1. Does the **permit** contain all 40 CFR 122.41 standard conditions or the State equivalent (or more stringent) conditions?			

List of Standard Conditions – 40 CFR 122.41

Duty to comply	Property rights	Reporting Requirements
Duty to reapply	Duty to provide information	Planned change
Need to halt or reduce activity not a defense	Inspections and entry	Anticipated noncompliance
	Monitoring and records	Transfers
Duty to mitigate	Signatory requirement	Monitoring reports
Proper O & M	Bypass	Compliance schedules
Permit actions	Upset	24-Hour reporting
		Other non-compliance

2. Does the permit contain the additional standard condition (or the State equivalent or more stringent conditions) for existing non-municipal dischargers regarding pollutant notification levels [40 CFR 122.42(a)]?			

Part III. Signature Page

Based on a review of the data and other information submitted by the permit applicant, and the draft permit and other administrative records generated by the Department/Division and/or made available to the Department/Division, the information provided on this checklist is accurate and complete, to the best of my knowledge.

Name	Anna T. Westernik
Title	Environmental Specialist II
Signature	A T Westernik
Date	October 7, 2010